

FIG. 1A

>SGPR397\_SEQID\_1  
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 AGAGGAAGCATAATGCACCTGAAGAAATATCCATCAACTTAAGGTGACCTGTGGCAGCCAGCAGTATCTCCTA  
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 CACCCATGGGAGAGATCTATGAGTGGATGAGAGAGATCAGTGAGAGTACAAGGAAGTGGTGACACAGCATTT  
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 AACATAGATGGTTATATCTACACTTGGACAACCTGATCGTCTTTGGAGGAAATCCCGTTACCCCATATAATGGCA  
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 CCAGCCCACTGTGAGGAGACCATGGAGGCTGTGCTGTCAGTCTGTGATGTATGCGAAACACTGGCACT  
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 CTCGGATCAGGAGTTACGACAGAGTGCAGCTCGTAACATGGCTGACTTAATGTGGAGCACAGTCAAGAACCAT  
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 CGGACACAGAAACGTCATTGCAAAAGAACTTGCAGACTGGCTTATTAGCAACAATGTGGTGAGCATATATTTG  
 GACCAAAATTTACATATTGAGATTATCAAAACAGTGCCCAAGTGATTTTGAATTTTGGCAGCAGAAAGGCGACTGAG  
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FIG. 1C

FIG. 1D

CACTCATCAAGAAATTTGGATCCCGTACCACTTAGACATCTACTTAATCTGGTCTCAGCTCTTGAGCCAAAGTGTCA  
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GTTATCTAAACAGAGTTCTTTTGCATCTTTATTAATACTAATAATCCCATTTGGAATAAGAAAGAGGAAGAGC  
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CAGTAGTGGGCATAGTGATGATCTAGCAATGAGTTAATCTAGCCACGCAAGCCAGTCAGCTGGGAGCCCTG  
GCAGTGAGGTACAGTCAGAAAGACATTGCAGATATTGAAGCCCTCAAGAGGAAGATGAAGACGATGATCATGGT  
CATAATCCTCCCAAAAGCAGTTGTGGTACAGATCTTCGGAATAGAAAGTTAGAGAGTCAAGCAGGCAATTTGCCCTG  
GGGACTCCCAAGGCACGTCAGAAAGAAATGGACAAGCAGCGGAACAGGAAGGACCTGGTTTTAACTG  
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TGGGAGACTATTGGGAATGAATTAATTAATGTCGACAAATTAATGGTCCACAGCATCACCCACCCACCA  
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CAAGAAAGGAATACTTTGTGTGGGATATAGTCCAAGATGAAGATGCAGTTAATCTTCTGAAGGATTAATAAT  
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GCTAAACCTGAACAAATTAGCATGACTGGCTTAAACCTGTTTCAGCATCTCTGTAACTTGGCTCGATTGGCTACC  
AGTGCCCTATGATGGTTGTTCAAAATCTGAGCTGTGGTATGGACCAATTTTGGGCAATGCTTTAAGAGCACAA  
TCTGGTGATGTCAGTCGAGCAGCTATCCAGTATATTAACTCCTATTATAATTAATGTTAAACAGGTTTGGAGAAGG  
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FIG. 1E

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CAGTCCATCAAAACAGACTTCCCTGCAGCCATGAAACCGTCTCAGGGTCTGGTAGTTTGGAGCCATTCTGGGC  
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GGAAGTGAATAGCTCGACGATTCTTCTTTGACATCTACTTCAACACCTCTTAGATCAGGGTTGCTAGAAAAT  
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TGAGCTAAAACGTTCTGTGGCCCTCAGCCAGAGACTTTGTGAATGTTAGGCAACGAACAGCAGCAGGAAGACC  
TGGAATAAGATTCAAAATTAATGCCCAATAGAGCCTGACAAGTCTGAATGGAAAACCTCAGGATTTGACAGAAATGA  
GCGAAGAAGAGCTTCTAGCAGCTGTCTTGGAGATAAGTAAGAGAGATGCTTCAACATCTCTGAGTCATGAAGATG  
ATGATAAGCCAACTAGCAGCCAGATACCGGATTTGCAGAAAGATGATATTCAGAAATGCCAGAAAATCCAGACA  
CTATGGAAACTGAGAAAGCCCAAAACAATCACAGAGCTGGATCCTGCCAGTTTACTGAGATAACTAAAGACTGTG  
ATGAGATAAAGAAAACAACCTCAGAAAGGATCTCAGGGAGAAGTTGATTGGCTCCAGCAGTATGATATGGAGC  
GTAAAGGGAAGAGCAAGAGCTTCAGCAGGCACTGGCTCAGAGCCTTCAAGAGCAAGAGGCTTGGGAACAGAA  
AGAAGATGATGACCTCAAAGAGCTACCGAGTTAAGTCTTCAAGAGTTTAAACAATCCTTTGTGGATGCATTGGG  
TTCTGATGAGGACTCTGGAAATGAGGATGTTTTGATATGGAGTACACAGAAGCTGAAGCTGAGGAACCTGAAAAG  
AAATGCTGAGACAGGAAATCTGCCCTCATTCGTACCGGCTCATCAGTGTGTGAGTCACATTTGGTAGCACTTCTTC  
TTCAAGTCAATTACATTAGTGATATATGACATTAAGAAGCAAGCGTGGTTTACTTACAAATGACCTGGAGGTATCA  
AAAATCCAAGAGGCTGCCGTGCAGAGTGATCGAGATCGGAGTGGCTACATCTTCTTTTATATGCACAAGGAGATC  
TTTGATGAGCTGCTGGAACACAGAAAAGAACTCTCAGTCACCTTAGCACGGAAGTGGGAAGACTACCCGTCAGGC  
CTCGTGA



CCACGATAGACCCATGCTGGGACATTAGTTGGACTTGGCTGGCTCTTGACCTCCTTCTGCCCCATGAGCCCA  
GGGAGGAGAGCAGTGTGAACGGGAAAGCCACATACCAGGAATCACCACTCACGGACTGCTTGGGAGGT  
TTACGAGGCCAGAGCACTTAGGAAGCAGTGCCAAAATCAAATGTGGTAGTTGCCAAAGCTACCAGGAATCTACC  
AAACAGCTCACAATGAATAATTACCTGCTGCTGCTTTTCAATTTCAACGGTTTGAACATTACGCGAAACAGA  
GGCGCAAGATCACTACATACATTTCCCTTCTGGAGCTGGATATGACGCCGTTTATGGCCTCAAGTAAAGAGA  
GCAGATGAATGGACAATTGCAGCTGCCAACCAATAGTGGAAACAACGAAAATAAGTATTCCTTGTGCTGTGG  
TTAATCACCAAGGAACCTTGGAGAGTGGCCACTATACCAGCTTCATCCGGCACCAAGGACCGTGTCAAG  
TGTGATGATGCCGTCACTAAGGCCAGTATTAAAGGACGTACTGGACAGTGAAGGGTATTTACTGTTCTATCAC  
AAACAGGTGCTAGAACATGAGTCAGAAAAGTGAAGAAATGAACACACACCAAGCCTACTGA

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ATGCGGGTGAAGATCCAACTAAAGCTTTACCTGAGAAAGCCAAAAGAAAGTAAAGGCCCTACTGTACCTCATGAT  
GAAGACTCTTCAGATGATATTGCTGTAGGTTTAACTTGCCAAACATGTAGTCATGCTATCAGCGTGAATCATGTAA  
AGAGAGCAATAGCTGAGAATCTGTGGTCAGTTTGCTCAGAATGTTTAGAAGAAAGAGATTCTATGATGGCAGC  
TAGTACTTACTTCTGATATTGGTTGCTCAGTGTGGCTCCAGGGATGTGGTAAAACTCAGAAAGCCAAAC  
ATTCATTGAAGCATTAAAGAGTTCAGAAACAGAGCCCCATTGTATTATAATTAATCTGAGCACATGGATTATATG  
GTGTTATGAATGTGATGAAAATTATCAACGCATTGTAATAAGAAAGTTTGGCTCAGATAGTTGATTTCTCCAG  
AAACATGCTTCTAAACACAAACAAGTGCATTTTCTAGATCATGAACCTTTGTGAAGAAAATGTGAACACAGATG  
AAATACAGAAAGGAGGAAATGCAGAAATTTATCTGTAAAGGAAATTACAAATTTAGGAAATACCTGCTTTTAAAT  
GCAGTCATGCAGAACTTGGCACAGACTTATACCTTACTGATCTGATGAATGAGATCAAGAAAGTAGTACAAAAC  
TCAAGATTTTCTCTCAGACTCTCAGCTGGACCCATTGGTGGAACTTTCAAGGCCCTGGACCACTGACCT  
CAGCCTTGTTCTCTCAGCATGAAGGAGACTGAAAAGGACCACTTCTCCTAAAGTTCTTTTAAATCA  
GCTTTGTCAGAAAGCACCTCGATTTAAAGATTTCCAGCAACAGGACAGTCAGGAGCTTCTTCAATTATCTTCTGGAT  
GCAGTGAGGACAGAAACAAAGCGAATACAAGCTAGCATTTCTAAAGCATTTAACAAACCACTACTAAACT  
GCTGATGATGAACCTAGAAAAGTCAAGATCTCCACGGTGAAGATCCATTGATATTTCACTTCTCTATAA  
TAGAAGAAAGGTTTCAAAACCTTTACTTTGGGGAAGAAATGAATAATAGAAAGTTTACGGGAGACAGATCATGA  
TCGATACAGTGGCAATGTTACTATAGAAAATATTTCATCAACCTAGAGCTGCCAAGAACATTCTTCATCTAAAGAT  
AAGAGTCAACTAATTCATGACCGAAAATGTATTAGAAAATTGTTCATCTGGAGAACTGTACATACCAAGAAAATG  
AAAACCTTGAATGAATGGGATTCCTTAATGTTTGGCAGCCTCATGAATTCAGTCACGCTCTGAATGAAAGCCC  
TACTGATGACAGTGAAAAGAGCCAGCCATTCTGAAGCAATGTTGATGCTGACAGTGAGCCTTCAGAAATCTGA  
AAGTGCTTCAAGCAGACTGGGCTGTTTCAGATCCAGTAGTGGATCCGGTGTGCAGCCAGATGGACCCCTTACC  
CTCTGTCAGCAGGTAACTGCTGTACACCAAGGAGACTGACAGTGGTGATAAGGAAATGGCAGAAAGCTATTTCT

GAACCTCGTTTGAGCAGCACTGTAACTGGGATCAAGATTTTACAGAGAAAAATCAGCCACTAAATATTTCAAATA  
 ATTTATGTTTTTATAGAGGGAGCAATTTGAGGTCTTATAGTCCCAAAATGCTTTTCAGACCCCTTCTCAGAGCTA  
 TATAACTACTTCTAAAGAATGTTCAATTCAGTCTGTCTCTACCAAGTTTACATCTATGGAATTAATAATGGGAATA  
 ATAAGCTTCTATGTGAGAAATGTACTAAAACAACAGAGTACCAAGAAGAAACAGTTTTCAGAAAAAGAAAGT  
 AGAAGGAGTTTATACTAATGCCAGGAAGCAATTGCTCATTTCTGCTGTTCCAGCTGTCTAATTTCTCCACCTGAAA  
 AGATTTTCATCAGGCTGGCTTGAGTCTTCGTAAGTAACAGAGACATGTAGATTTTCCACTTATGCTCGATTTAGCAC  
 CATTCTGCTCTGCTACTTGTAAAGATGCAAGTGTGGAGATAAAGTTCTCTACGGTCTCTATGGCATAGTGAAC  
 ATAGTGGCTCGATGAGAGAAGGCCACTACACTGCTTATGTGAAAGTGAGAACACCCCTCCAGGAAATATATCGGAA  
 CATAACACTAAAAAGAAAAATGTCCCTGGTTTGAAGCGGCTGATAGTGAATCAGCAGGCCAGTGGGTCCATGTT  
 AGTGACACTTACTTACAGGTGTTCCAGAAATCAAGAGCACTTAGTGCAACAAGCCTACCTTCTTTTCTATGAAAGAG  
 TATTATAA

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ATGGAGTATCCAGTCCCATACCTTAGATCCCCGAACAGGACTCTGATCCAGAGAGAAATTTGGTCAAACCCATTA  
 CTTGTCTTGTCATCGCATACAAGACTGTGAGTTGGCCAAAGACAGCAGCTGCTTGCAAGCAAGCTAATAAGTGG  
 ATGCCCTTTGTGATACCGAGCAAAACCTTGCCATGGGACCCACTGGAACCTCAAGATTTGTTATCAGCAAAATCGC  
 CCATATCCCTCCCCGACCCATCAAACTTTCTACCTTCTTACGCTGTCTGAATGCTTTCTCTGCAGCTGCTTCT  
 ATCTCCACAGCCCTCATGGCATAAGCCCGAGGCTTAAAGCCAGCAGGATACCCAAGAGTTCTTGACATTCCT  
 TATGGAGCGGCTACACCTTGAAATCAACCACGGAGCGCGGGCTCCACCAGTCCCTGCCCATGGTCCAGC  
 TCCCTCTCCACCCCAAGGGAGTGTCTGTCTAAAGAGTCTGAGTTAAATGATGCTGACTGGGCCAACCTA  
 ATGTGGAAGCGTTATCTGGAAGAACAAAGAGGACAGCAAGATGGTGGATCTGTTTGTGGCCAGATGAAAAGTTA  
 TCTCAAGTGCCAGGCTGTGGGTACCACTCTATGACCTTCAAGGTTTTTTTTTTGTGACCTCTCCCTGACCATC  
 CCCAAGAAAGGATTTGCTGGGGCAAGGTGTCTCTGCGGATTGTTAAGCCCTTTTACCAGGAAGAGAGCT  
 AGAGTTAGAGAAATGCCCTCAGGACTTTGCCAGTGACAAAGTCGGAAGTCTGTCTACCAAGCTGTGTGCCCTTTG  
 GAACCACTCAGGCAGCATCCACTGTGGCCACTACACAACCCCTGTGCCAGTGCCAGACTGGTTGGCACGTTTACA  
 ATGACTCTTGCTCTCCCTAAACACGCTGCGGGACACAGAAAGAAATAGAACTCACAGTTATGAAGGCTCTAGTT  
 CTAGACATTCTGTTCAAGCTTCCACAGATAATTTTATTTAATCATGACTCCAGCTCTGGAAACAAATGGAGGA  
 AGTTACCAGAACCTGGAGGTTTGGAAAAGAAACATGAAGAGCTGAGACTCAGACCTCTGAAGGAGGAGTACCAT  
 TGGCTGGTGTGGTCCCTCTGAACTGACAGGAAGTCCCCACAGATGGAGGCCAGGAAGAGGGCGCTGGCCA  
 GCTGCAGCTGTGCTCCAAAGGCTACCATGAGCGGGTTATGGGTGTGCAGGACAAAGCTGGAACACAGGAA  
 CCAGATGCTGCTGTGGGCAAGACCTGTGATAGGTGATACAGTCAGCAACAGCCAGACAACCTAGGGACAAG  
 GCTTGACAGCGGCCACCTTCTCACTCTGTCTTCACACAGTCTCTCTCTGGCATGTCTGGATCTCTCTCTTC

FIG. 1K

TTCTATGGACACCAGTCATATTGGATGAAGGCCACCTTAATGACCTCATTTAAGGGAGGGCCCTGTGACACAA  
 ATGGCCAGAGTTTTACTGGGTTTTCTGCTGGAGGAACTTGCTGCTTTAGAAATGCTGCCTGATGGACCA  
 GCACCAAGGACGTTCTTCAGAAGAAAGCTGTCTTTCCCTGTTCTCTTACATTTTGCATAAGGCAGGTA  
 AACTCTCCAGCCTGATGCTCATGGATTTCTAGTGAAGAAAGTTCTGCTCAACAAGGGGCATCGTGTATCAT  
 GGAACCAAGACAGCTGGTGGGAGGGCTCCCTGTCAAACTCCAACAGCCTGTGCACCTGGAGGAATGAAC  
 AGTGGGATGGAGCCACAGAGTCTGCACCAATTTGCAGCAGGGAAGGCTGGCCCTCCTCTTCCCTGTGTGCAA  
 CCTGAGATTCAACTACGAGTTTACAAATTTGAGGAAGAGCTTTGGTCCAGGGCAGGCTTGGGAAGAAAGTG  
 ACAACCACTCATCTAGGCAGATGCCCTGGGTGCCGTGGGTGGCATGCCAGCATCCATGTAAACTGCCCAG  
 AATTGTTGCAGAGTTGACACCTCCAAATTTGCTATTTGTTTCTGAACACAGTTCAGAGTTCAGTACTTCTTACT  
 TCCCTGTCTCAGTTTTCTCAATGATTTCTCAACCAGAGGAAGCAATACCTCCTCAATCCCTGCTCCCGGTTCC  
 CCAAGGACAAATTCATTCGCCAAGGACAAATTTGTCCCAAGGACAAATTTGAAGGTGATATTGTCCCTGCTGACA  
 ATGTATGAACCTAGACCGATTATTT

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ATGCTAGCAATGGATACGTGCAAAACATGTTGGGCAGCTGCAGCTTGTCTCAAGACCATTCCAGCCTCAACCCCTCA  
 GAAATGGCACTGTGGACTGCAACACGACCGAGTCCATTTGGGCTTGCCCTTAGCTGCTCCCATGTTCCTGTG  
 GAAGATATATTGAAGAGCATGCACCTCAAGCACATTTCAAGAAAGCAGTCATCCTGTTGCATTGGAGGTGAATGAGA  
 TGTACGTTTTTTGTTACCTTTGTGATGATTATGTTCTGATGATAACGCAACTGGAGACCTGAAGTTACTACGACG  
 TACATTAAGTGCCATCAAAAGTCAAAATTTACCTGCACAACTCGTAGTGGAGGTTTTACGGTCCATGGGTACA  
 GGTGATGATTCCTATTCTTACATGACGGTGCCCAATCTCTGCTTCAAGTGAAGATCAACTGTATACTGCTCTTT  
 GGCACAGGAGAGGATACTAATGGGTAAATCTTTCCGACATGGTTTGAACAATCACCCATTGGAAAGAAAGC  
 AAGAAGAACCATTTCAGGAGAAATAGTAGTAAAGAGAAAGTAAAGAAAGACGGCAGGAATTGGAGTATCAAG  
 TTAAGCAGAAATTGGAAAGTATGCCTCCAAGAAAGAGTTTACGTTTACAAGGGCTCGCTCAGTCGACCATATAG  
 AAATAGTTTCTGTTCAAGTGCCAGCACAAACGCCAGCATCACCAAGAAAGATAAGTACTCTCTACCTCAGAA  
 ATGAAATATCTCAAAAGTCAGTGACTCCTCAGTTAAACGAAGGCCAATAGTAACTCCTGGTGTAAACAGGATTGA  
 GAAATTTGGGAATACTTGCTATATGAATCTGTTCTTCAGGTGTTGAGTCATTTACTTATTTTCGACAATGTTTT  
 TAAAGCTTGATCTGAACCAATGGCTGGCTATGACTGCTAGCGAGAAGACAAGATCTTGTAAAGCATCCACCAAGTCA  
 CAGATACAGTAGTATATCAAAATGAATGAATGTGAGGAAAGATACAGGTTTTGTTGCTCCAGACAATCAAGTCT  
 GTCATCAGGACTAAGTGGTGGAGCATCAAAAGGTAGAAAGATGGAACCTTATTCAGCCAAAGGAGCCAACTTCACA  
 GTACATTTCTCTTTGTGATGAATTGCATACCTTTGTTCCAAAGTCATGTGGTCTGGAAAGTGGCGTTGGTCTCACCA  
 TTTGCTATGCTACACTCAGTGTGGAGACTCATTCCTGCTTTCGTTGTTACGCCCAACAAGACGCTCAGGAATTT  
 CTTTGTGAACCTTTTAGATAAAATACAAACGTGAATTAGAGACAACTGGTACCAGTTTACCAGCTCTTATCCCCACTT

FIG. 1L

CTCAAGGAAACTCATCAACAAGTTCTGAATGTTGTAATAACATTTTTCATGGACAACCTTCTTAGTCAGGTTACA  
TGCTTGCATGTGACAACAAATCAATACCATAGAACCTTTCTGGGACTTGTGACCTTGTGAGTTTCCAGAAAGGTATC  
AATGCAGTGGAAGAGATATTGCTTCCAGCCATGTCTGTTACTGAAATGTTGGCCAAATTTACAGAAACTGAAG  
CTTTAGAAGGAAAAATCTACGTATGTGACCCAGTGTAACTCAAAAGCGTAGAAGGTTTCTCCAAACCAGTTGTACT  
CACAGAGCCAGAAACAACTTATGATATGCCACCTACCTCAGGTTCTCAGACTGCACCTCAAAACGATTACAGGTG  
GTCAGGACGTAATAACCGAGAGAAGATTGGTGTTCATGTTGGCTTTCAGGAAATCTTAAACATGGAGCCCTATTG  
CTGCAGGGAGACCCCTGAATCCCTCAGACCAGAATGCTTTATCTATGACTTGTCCGCGGTGGTATGCACCATG  
GGAAAGGATTTGGCTCAGGGCACTACACTGCCTACTGCTATAATTCTGAAGGAGGTTCTGGGTACACTGCAAT  
GATCCAAACTAAGCATGTGCACTATGGATGAAGTATGCAAGGCTCAAGCTTATATCTTGTGTTTATACCCAACGAG  
TTACTGAGAAATGGACATTTCTAACTTTTGGCTCCAGAGCTCCTGTTGGGAGGCCAACATCCCAATGAAGACGCTG  
ATACCTCGTCTAATGAAATCCTTAGCTGA

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ATGCGGGTGAAAGATCCAACTAAAGCTTTACCTGAGAAAGCCAAAGTAAGGCCCTACTGTACCTCATGAT  
GAAGACTCTTCAGATGATATTGCTGTAGGTTTAACTTGCCAAACATGTAAGTCATGCTATCAGCGTGAATCATGTAA  
AGAGAGCAATAGCTGAGAACTGTGGTCAGTTTGTCTCAGAAATGTTAGAAAGAAAGATTCTATGATGGCAGC  
TAGTACTTACTTCTGATATTTGGTTGTGCCCAAGTGTGGCTCCAGGGATGTGGTAAAACTCAGAAAGCCAAAC  
ATTCATTGAAGCACTTAAAGAGTTCAGAACAGAGCCCCATTGTATTATAATTAATCTGAGCACATGGATTATATG  
GTGTTATGAATGTATGAAAAATTAACAAGCATTTGTAATAAGAGGTTTGGCTCAGATAGTTGATTTCTCCAG  
AAACATGCTTCTAAAACACAAACAAGTGCAATTTCTAGAAATCATGAAACTTTGTGAGAAAAATGTGAAACAGATG  
AAATACAGAAAGGAGGAAAAATGCAGAAATTTATCTGTAAGAGGAATTACAAATTTAGGAAATACTTCTTTTAAAT  
GCAGTCATGCAGAACTTGGCACAGACTTATACTCTTACTGATCTGATGAATGAGATCAAGAAAGTAGTACAAAAC  
TCAAGATTTTCCCTCCTCAGACTCTCAGCTGGACCCATTGGTGGTGAACCTTTCAAGGCCCTGGACCACTGACCT  
CAGCCTTGTTCTTCTCACAGCATGAAGGAGACTGAAAAAGGACCACCTTCTCCTAAAGTTCTTTTAAATCA  
GCTTTGTCAGAAAGGGGTGCATCTACATTTAATATAA

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ATGACTGTCCGAAACATCGCCTCCATCTGTAAATATGGGCACCAATGCCTCTGCTCTGGAAAAAGACATTGGTCCA  
GAGCAGTTTCCAAATCAATGAACACTATTTCCGATTGGTCAATTTGGAAACACATGCTACTGTAACTCCGTGCTTC  
AGGCATTGTACTTCTGCCGTCCATTCGGGAGAAATGTGTGGCATACAAGGCCCGCCAGCAAAAGAAAGGAAAAAC  
TTGCTGACGTGCCCTGGCGGACCTTTTCCACAGCATTTGCCACAGAAAGAAAGGTTGGCGTCATCCCAACCAA  
GAAGTTCAATTTCAAGGCTGAGAAAAAGAGAAATGATCTCTTTGATAACTACATGCAGCAGGATGCTCATGAATTTTA

FIG. 1M

AATTATTTGCTAAACACTATTGCGGACATCCTTCAGGAGGAGAAACAGGAAAAACAATGGAATTTAAAA  
 ATGGCAACATGAACGAACTGCGGAAAAATAAACCAGAACTCACCTGGTCCATGAGATTTTTCAGGGAACGC  
 TTACCAATGAACCTCGATGCTTGAACCTGTGAACCTGTAGTAGCAAGATGAAGATTTTCTTGACCTTTCTGTTGA  
 TGTGGAGCAGAATACATCCATTACCCACTGTCTAAGAGACTTCAGCAACACAGAAAAACACTGTGTAGTGAACAAAA  
 ATATTATTGTGAACATGCTGCAGCAACAAAGAGCCAGAAAAAGGATGAGGTAAGGTAAGCTGCCCATGGTCTT  
 GGCCCTGCACCTAAAGCGGTTCAAGTACATGAGCAGCTGCGCAGATACACCAAGCTGTCTTACCGTGTGGTCT  
 TCCCTCTGGAACCTCCGGCTCTTCAACACCTCCAGTATGCAGTGAACCTGGACCGCATGTATGACTTGGTTGCG  
 GTGGTCTTCACTGTGGCAGTGGTCTAATCGTGGGCATTATACACTATTGTGAAAGTCACGGCTTCTGGCTT  
 TTGTTTGATGATGACATTGTAGAGAAAAATAGATGCTCAAGCTATTGAAGAACTTCTATGGCCTGACGTCAGATATAT  
 CAAAAATTCAAGATCTGGATATATTTTATTCTATCAGTCAAGAGAGTAA

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ATGGTGCCCGGAGGAGAACCAACTGGTCCCGAAAGAGGCCACCACTGGATCATACCAGTGACAAAGTCACCTCT  
 CGACGCTAATTTTGAGCCAGGAAGAAGAACTTTCTGCAATTTGACAGATAAGATGGTGAACAACCTCAAATACT  
 GCTGGAGGATCCAGTGTGCGGGAAGACAGTGTTCATGACAGGTTTATAGGTCGCTTCCAAGAGAAGGTTCTG  
 TGGGTTCTACAGTGATTATGTCAGCCAAAGCTACTCCTACTCATCTATTTTGAATAAATCAGAACTGGATATGT  
 GGGACTAGTAAACCAAGCAATGACTTGTCTATTTGAATAGCCTTTTGCAACACCTTTTATGACTCCTGAATTTAGG  
 AATGCATTATATAAGTGGGAATTTGAAGAACTCTGAAGAAGATCCAGTGACAAGTATTCATACCACTTCAAAGGC  
 TTTTGTGTTTGTACAAACCAAGCAAAAGAGAGCAATTGAACCCACAGATGTTACAAGGAGCTTTTGATGGGATAG  
 TAGTGAGGCTTGGCAGCAGCATGATGTACAAGAACTATGCAGAGTCATGTTTGTGCTTTGGAACAGAAATGGAA  
 GCAACAGAACAGGCTGATCTTATAATGAGCTATATCAAGGCAAGCTGAAGGACTACGTGAGATGTCTGGAATG  
 TGGTTATGAGGCTGGCGAATCGACACATATCTTGATATCCCATTTGGTCAATCCGACCTTATGGGTCAGCCAAAGC  
 ATTTGCTAGTGTGGAAGCATTGCATGCTATTTATTCAGCCAGAGATTCTGGATGGCCCAATCAGTATTTTGT  
 GAACGTTGTAAGAAGAAGTGTGATGCACGGAAGGCCCTCGGTTTTTGCAATTTTCTTATCTGCTGACCTTACAG  
 CTGAAAAGATTGATTTGATTATACAACCATGCATAGGATTAACTGAATGATCGAATGACATTTCCCGAGGAAC  
 TAGATATGAGTACTTTTATTGATGTTGAAGATGAGAAATCTCCTCAGACTGAAAGTTGCACCTGACAGTGGAGCAGA  
 AAATGAAGGTAGTTGTACAGTGTACAGTGCAGTGAACGATTTCTCCAATGATGATGGTGTGATGAAGGAATCTG  
 TCTTGAACCAATAGTGGAACTGAAAAGATCTCAAAATCTGGACTTGAAGAAGAAATTCCTTGATCTATGAACCTTTCT  
 CTGTTATGGCTCATTCTGGAGCGCTGCTGGTGGTCAATTTATGCAATGTATAAAGTCAATTCAGTGATGAGCAGT  
 GGTACAGCTTCGATGATCAACATGTACGAGGATAACACAAGAGGACATTAAGAAAAACACATGGTGGATCTTCAG  
 GAAGCAGAGGATATTATCTAGTGTCTTCGCAAGTTCCACAAATGCATATATGCTGATCTATAGACTGAAGGATCC  
 AGCCAGAAATGCAAAATTTCTAGAAAGTGGGTGAATACCCAGAACATATTAAAAAACTTGGTGCAGAAAAAGAGAGA

FIG. 12

GTTGAAGACAAGAAAGAGACAACGAGAAATTGAGCGCAATACATGCAAGATAAAATATTCTGTTTGCATCCT  
 ACAAAACAAGTAATGATGGAAAATAAATTGGAGGTTTCAAGGATAAGACATTAAGGAAGCAGTAGAAATGGCTT  
 ATAAGATGATGGAATTTAGAAGAGGTAAATACCCCTGGATTGCTGCGCCTGTTAAATATGATGAGTTTCATGATTA  
 TCTAGAACGGTGCATATGAAGGAGAAGAGATACACCAATGGGCTTCTACTAGTGGCGTCAAGTCAACATATAT  
 GTTTGATCTGCTGTTGGAGACGAGAAGCCTGATCAGGTTTTCCAATCTTATAAACCTGGAGAAAGTATGTTGAA  
 AGTTTCATGTTGTTGATCTAAAGGCAGAACTGTAGCTGCTCCTATAAAGTCTTCTACTTAAATCAGACAGTT  
 ACAGAAATCAACAACCTGATTTCAAGGCCATCCATTTACCTGCTGAACAATGAGAAATAGTGTGGAACGCTGC  
 TACAATGATTTGCGTCTTCTCAGTGCTCCAGTAAACCCCTGAAAGCTGAAGGATTTTTAGAAGTAAACAAGGTGT  
 TTGTTGAAGCTCCGAGACTTTGGATTACAGATGGCCTTTGCAGACTCTCATTTATGGAAGCTCCTGGATCGGC  
 ATGCAATACAAATCAGATTAATTTGTTTGTACCTGAACAATCCCCAGTATCTTATCCAAAAGGACAGCATACCA  
 GAAAGCTGAGCGGATTTCTGTAATGTGGATGATGACTGTGAAGAGTCAAGGACCTGTAGGAAGCCTAAAGT  
 CTGTGGAAGCTATTTCTAGAAGAAAGCACTGAAAAACTCAAAAGCTTGTCACTGCAGCAACAGCAGGATGGAGATA  
 ATGGGACAGCAGCAAAAGTACTGAGACAAGTGACTTTGAAACATCGAATCACCTCTCAATGAGAGGACTCTT  
 CAGCATCAGTGGATAATAGAGAACTTGAACAGCATAATCAGACTTCTGATCCAGAAAAATTTTCAAGTGAAGAACG  
 ATCAGACTCAGATGTGAATAATGACAGGAGTACAAGTTCAAGTGGACAGTGATATTTAGCTCCAGTCATAGCAG  
 TGATACTTTGTGCAATGCAGACAATGCTCAGATCCCTTTGGCTAATGGACTTACTCTCAGATCACAGTATCACAAAGTAGT  
 AGAAGAACGAAAGCAATGAAGGAAAAAGAAACATGGGATACAGCAGAGAAAGACTCTGGAAGTATGATGA  
 ATATGATGAGAGTGGCAAGAGTAGGGAGAAATGCAGTACATGTATTTCAAAGCTGAACCTTATGCTGCAGATGA  
 AGGTTCTGGGAAGGACATAAATGTTGATGTTGATGATGATAAAGAAATTAATCTGCGAGCTTCAAACAACA  
 TTTAGAGCCCTTTGTTGGAGTTTGTCTCTCACTTCAAGGCTTTTCGAGTGTATGCCAGCAATCAAGAGTTTGAG  
 AGCGTCCGGCTGAATGAGACACTTTTCATCATTTTCTGATGACAATAAGATTACAATTAGACTGGGAGAGCATT  
 AAAAAAGGAGAAATACAGAGTTAAAGTATACAGCTTTTGGTCAATGAACAAGAGCCATGCAAGTTTCTGCTAGAT  
 GCTGTGTTTGTAAAGGAATGACTGTACGGCAATCAAAAGAGGAATTAATCCCTCAGCTCAGGAGCAATGTGGT  
 TTAGAGCTCAGTATTGACAGGTTTTCGTCTAAGGAAAAAACAATGGAAGAACTCTGGCACTGCTTTTTGGATTATC  
 ATATTTATGAAGAAGATATTAATTTCCAGCAACTGGAGGTTTCTTGAAGTTCTTGATGGGTAGAGAAGAT  
 GAAGTCCATGTCACAGCTTGCAAGTTTGTCAAGACGGTGAAGCCTTCAGAGATGAAGTTGGATCCCTTCCAGG  
 AGGTTGATTGGAAAGCAGTAGTGTGACGAAATTCGAGAGAAAGCTTAGTGAATCAGTGGGATTCCTTTGGATG  
 ATATTGAATTTGCTAAGGTAGAGGAACATTTCCCTGTGATATTTCTGCTTGTATTCATCAGGATTTAGACTG  
 GAATCCTAAAGTTTCTACCTGAATGCTGGCCTTTTATATCTGTGATGATGGTGGTGCATATTTTATAGGGAT  
 AAAACAGAAGAAATTAATGGAAATTGACAGATGAGCAAGAAATGAAGTATGATAAAGAAAGCAAGTCCAGTCCAG  
 AAGACTGGACATCGTGTAAACATACTCACCTCGTAAAGAGAAAGCACTAAAAATATATCTGGATGGAGCACCAAAT  
 AAAGATCTGACTCAAGACTGA

FIG. 1P

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 ATGGGTGCCAAGGAGTCACGGATCGGATTCTCAGCTACGAGGAGGGCGCTGAGGAGAGTTACAGATGTAGAGC  
 TAAACGACTGAAGGATGCTTTCAAGAGGACCTGTGGACTCTCATATTACATGGGCCAGCAGCTGCTTCATCCGGG  
 AAGTGCTTGGGATGGAGTGCCCTCCAAAGTTGCTGAGGTGATTACTGTTCTTTGGTGAACATCCAAAGGG  
 CTGCACCTCAATAATTAAATAGTTGGACTTGTCTCTTACAAGAGGCAAGATGAAGAGAAAGCAAAATACATTT  
 TTAGTCTTTTTCAAGTGAATCTGGGAATCTGTTATACGGGAAGAAATGGAAGAAATGCTCCACGTGGTGATG  
 GTAAAGTCCAGATACACTCAGGAAGTGTCTCAGAGGGTGAAAGGTAAACTATGAAAGTTTAGAAATTGGC  
 TTTTCTAAACAAGATGCTTTTACTTCTCTCGATGGCTTCTATCTGGAGGTGTGTATGTTACCCCTCACTGATGAT  
 AGTGATACTCCTACTTTCTACCAACTCTGGCTGGAGTCACACATTTGGAGGAATCAGACATCATTGATCTTGAGA  
 AACGCTATTGGTTATTGAAGGCTCAATCCCGACTGGACGATTTGATTTAGAGACATTTGGCCCATTTGGTTTCAC  
 CACCTATTCTCCATCTCTAAGTGAAGTTTGTAAATGCTTTGATGAAATCGTGACAATCACATAGATTTTAAG  
 GAGATATCTGTGGTTATCAGCCTGTTGCAGGGGACCCCTGGCTGAAAGACAAATTTTGCTTCAAGGTATTT  
 GATGTTGACCGTGATGGAGTTCTCTCCAGGGTTGAACCTGAGAGACATGGTGGTTGCACCTTTTAGAAGCTCGAA  
 GGACAACCGCACTGATGATATTCCTGAATTACATATGGATCTCTGATATTGTAGAAGGCATACCTGAATGCACAT  
 GACACCACAAAGATGGTCACTTACTCTGGAAGACTATCAGATCTGGAGTGTGAAAATGTTCTTGCCAATGAG  
 TTTTGAACCTCCTTTTCCAGGTGTACATAGTTCTGGGTTAAGACCAGCTACTCCGGAAGAAGAGACAA  
 ATTATTAGAGGATGTTAGAACGAGAGAGCAGGTATGGTCTGCAAGCAGGACACAACTGGTTTATCATCTCCATG  
 CAGTGGTGCAACAGTGGAAGAATATGTCAATACGATGCCAACCCCTGTGGTAATTGAGCCATCATCTGTTTTG  
 AATGGAGGAAAATACTCATTGGAACTGCAGCCCATCCTATGGAGCAGGTGGAAGATAGAATTGGAAGCAGCCT  
 CAGTTACGTGAATACAGAAAGAGAAATTTTCAGACAACATTTCTACTGCATCTGAAGCCTCAGAACTGCTGGC  
 AGCGGCTTCTGTATTCTGCCACACCAGGGGCAGATGTTTGCTTGCTCGACAACATAACACTTCTGACAATAAC  
 AACCAGTGTGCTGGAGCCCAATGGGAATATTTTGTGCACCTTAACCCCTCAGAAACCAGGGCTATTGATAAT  
 CAGCCATTAGTAACCAAGAACAGTAAGGCTACATCATTAACACTAGAAGGAGGACGATTAAACGAACTCCA  
 CAGCTGATTTCATGGAAGAGACTATGAAATGGTCCAGAACCTGTGTGGAGAGCACCTTTATCACTGGTATGGAGCA  
 AACCTGGCCTTACCTAGACCAGTTATCAAGAACAGCAAGACAGACATCCAGAGCTGGAATTTATTTCCCGCTAT  
 CTTCTCTTCTGAGACAGCAGCCTGCCACTCGGACACAGCAGTCAACATCTGGTGAATATGGGAATGTACCT  
 TCTCCGAATGCACCTTTAAAGCGGGTATTAGCCTATACAGGCTGTTTAGTCGAATGCAGACCATCAAGGAAAT  
 CACGAATATCTATCTCAAGGCTGCGCATTAAGAGGGAAGATATGCGCCTGTGGCTATACAACAGTGAGAACTAC  
 CTTACTCTTCTGGATGATGAGGATCATAAATTGGAATATTTGAAATCCAGGATGAACAACACCTGGTAATTGAAG  
 TTCGCAACAAGATATGAGTTGGCCTGAGGAGATGCTTTTATAGCAATAGTAGTAAATAGATAGACACAAGGT  
 TCCCACAGAAAAGGGAGCCACAGGTCTAAGCAATCTGGGAAACACATGCTTCATGAACTCAAGCATCCAGTGTG

TTAGTAACACAGCCACTGACACAGTATTTTATCTCAGGGAGACATCTTTATGAACTCAACAGGACAAATCCCAT  
TGGTATGAAGGGGCATATGGCTAAATGCTATGGTGAATTTAGTGCAGGAACCTTTGGAGTGGAACTCAGAAGAATGT  
TGCCCCATTAAAGCTTCGGTGGACCATAGCAAAATATGCTCCAGGTTTAAATGGGTTTCAGCAACAGGACTCCCA  
AGAACTTCTGGCTTTTCTCTTGGATGGTCTTCATGAAGATCTTAATCGAGTCCATGAAAAGCCATATGTGGAACGTG  
AAGGACAGTATGGCGACCACTGGGAAGTAGCTGCAGAGGCCCTGGACAAACCATCTAAGAAGAAATAGAT  
CAATTGTTGTGGATTTGTTCCATGGCAGCTAAGATCTCAAGTAAATGCAAGACATGTGGGCATATAAGTGTCC  
GATTTGACCCCTTCAATTTTTGCTTTGCCACTACCAATGGACAGTTATATGCACCTAGAAATAACAGTATTAAAG  
TTAGATGGTACTACCCCTGTACGGTATGGACTAAGACTGAATATGGATGAAAGTACACAGGTTTAAAAAACAG  
CTGAGTGATCTCTGTGGACTTAATTCAGAAACAAATCCTTCTAGCAGAAGTACATGGTTCCAACATAAAGAACTTTC  
CTCAGGACAAACCAAAAGTACGACTCTCAGTGAGTGGATTTTGTGTGCAATTTGAAATTCCTGTCCCTGTGTCTCC  
AATTCAGCTTCTAGTCCAACACAGACAGATTTCTCCTCTTCGCCATCTACAAATGAAATGTTTACCCCTAACTACC  
AATGGGACCTACCCCGACCAATATTCATCCCAATGGAATGCCAAACACTGTTGTGCCATGTGGAACCTGAGAA  
GAACTTCACAAATGGAATGGTTAATGGTCACATGCCATCTCTCTGACAGCCCCCTTTACAGGTTACATCATTGCA  
GTCCACCGAAATGATGAGGACAGAACTGTAATTCCTGTCTCATCTCAGAAAGTATGCCCCAGCCTCTTTTGGAAATG  
CCATTGATTGTTCCATGTACTGTGCATACCCGGAAGAACCTATATGATGCGGTTTGGATTCAAGTATCCCGG  
TTAGCGAGCCACTCCACCTCAGGAAGCTAGTAATCATGCCAGGATTGTGACGACAGTATGGGCTATCAATAT  
CCATTCACTCTACGAGTTGTGCAGAAAGATGGAACTCCTGTGCTTGGTGCCCATGGTATAGATTTTGCAGAGGC  
TGTAATTTGATTGTGGGAAGACAGAGCTTTTCAATTTGGAATGCCATATATCGCTGTGGATTGGATCCCACAGCC  
CTTCACTTCTGCTATCAACATCCAGGAAGGTTGTAGATGAGCATGAGAGTGTGGAGCAGAGTCGGCGAGC  
GCAAGCCGAGCCCATCAACCTGGACAGCTGTCTCCGTCTTCCAGTGTAGGAAGAGCTAGGGAAATGAG  
ATGTACTACTGTTCCTCAAGTGAAGACCCACTGCTTAGCAACAAGAAAGCTGGATCTCTGGAGGCTTCCACCCATC  
CTGATTATTCACCTTAAGCGATTTCAATTTGTAAATGGTCGGTGGATAAAATCACAGAAAATTTGCAAAATTTCTCTCG  
GGAAAGTTTTGATCCAAGTGCTTTTTTGGTACCAAGAGACCCGGCTCTCTCCAGCATAAACCACTCACACCCCA  
GGGGATGAGCTCTGAGCCCCAGGATTTCTGGCAAGGGAGGTGAAGAAAGTGGATGCGCAGAGTTCGGCTGG  
GGAAGAGGACGTCTCTGAGCAAAAGCCCATCTCACTACGCGTAACTATCATCAGCAGCCCGAAAGGTTCTC  
CTTCTTCATCAAGAAAAGTGAACCAAGCTGTCCCTCCAGCAAAAACAGCAGCCCTAATAGCAGCCACGGACTT  
TGGGAGGAGCAAAAGGAGGCTCCGGCTGCCCCAGATTGGCAGCAAAAATAAACTGTCAAGTAGTAAAGAGAA  
CTTGATGCCAGCAAGAAAATGGGGCTGGGCAGATATGTGAGCTGGCTGACGCCCTTGAAGTGGAGGCAATGTG  
CTGGGGGCGACCAACAGAGTTGGTCACTCTCAGGACCATGAGGTAGCTTTGGCCAAATGGATTCCTTTATGA  
GCATGAAGCATGTGGCAATGGCTACAGCAATGGTCAGCTTGGAAACCACTGAGTGAAGAACAGCAGCTGATGACC  
AAAGAGAAGATACTCGTATTAAAGCCTATTATAATCTATATGCAATTTCTGTCATTCAGGAATTTCTGGTGGGG  
CCATTACGTCACTTATGCCAAAACCCAACTGCCAAGTGGTACTGTTACAATGACAGCAGCTGTAAAGAACTTCA

FIG. 1Q

FIG. 1R

CCCGGATGAAATTGACACCGACTCTGCCTACATTCTTTTCTATGAGCAGCAGGGATAGACTATGCACAATTTCT  
GCCAAAGACTGATGGCAAAAAGATGGCAGACACACAAGCAGTATGGATGAAGACTTTGAGTCTGATTACAAAAAGTA  
CTGTGTGTTACAGTAA

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ATGGACAAGATCCTGGAGGGCCTTGTGAGTTCCTCGCATCCCCCTCAAGCGGGTGATTGTGCGGAAGG  
TGGTGAATCGCGGAGCACTGGCTAGACGAGGCGCAGTGGAGGCCATGTTTGACCTGACGACCCGGCTCAT  
CCTGGAGGCCAGGACCCCTTCCAGCGCAGGTGGGCCACCAGGTGCTGAGGCCCTACGCACGATACCACCG  
GCCAGAGTTCGAGTCCCTTCTTCAACAAGACCCTTCGTGTTGGCCCTCCCTTCATCAGGGCTACCACCTCTCTGGACAG  
GAAGGATGTAGCCATCCTGGACTACATTACAAACGGCCTGAAGCTGATTATGAGCTGTCCGTCGGTGTGCTGGATC  
TCTTAGCCTCCTGCAGGTAGAGGTGTTACGGATGGTGTGAGAGGCCGAGCCGAGCTCTGTGCCCGACT  
GAGCGACCTTCTGACCGACTTTGTCAATGCATCCCCAAGGGGAAATTGTCCATCACGTTCTGTCAACAGCTGGT  
TCGAACGATAGGCCATTTCCAGTGGTGTCCACCCAGGAAGAGAGCTGCGGGAATATGTCTCCAGGTGACAA  
AAGTGAGTAACTTGCTGCAGAACATCTGGAAGCGCGAGCCTGCCACACTACTGCCCTCCCTGCAAGAAGTTTTTG  
CAAGCATCTCTCCACAGATGCATCATTTGAACCTTCTGTAGCATTTGGCAAGCCTTGTGCAGCATATTCCTCTTCA  
GATGATTACAGTTCTCATCAGGAGCCTTACTACGGATCCAAATGTAAAGATGCAAGTATGACCCAAAGCCCTTTG  
CAGAAATGATTGACTGGCTATCCTGGCCATTGGCTCAGCATGTGGATACATGGGTAATTGCACCTCCTGAAAGGACT  
GGCAGCTGTCCAGAAGTTTACTATTTGATAGATGTTACTTTGCTGAAATAGAACTGGTTTTTAATCGACTTTGGT  
TTCTCTTGTGAGACCTGGTGCTCTTGCAAGTTCTTCTCACATGCTGCTTAGCTTTCAGCATTCCTCCAGAGGCGTT  
CCATTTGATTGTTCCCTCATGTGGTTAATTTGGTTTCATCTTTCAAAATGATGGTCTGCCCTTCAAGTACAGCCTTCT  
TAGTACAAATTACAGAAATTGATACACTGTATGATGATCATTAATCTGGATTTCCAGATCTCTATGAACCTATTCTG  
GAGGCAATAAAGGATTTTCCCTAAGCCCAAGTGAAGAGAAATTAAAGTTAAATCTCAATCAAAGTGCCCTGGACTTCTC  
AATCCAATTTCTTGGCGCTTGGCTGTCTAGACTTTCTGGAAATCTGAAACTGGGAAACTGGTCTTATTAAACCT  
AGGAATACATGTTATATGAACAGTGTATACAAGCCTGTTTATGGCCACAGATTTCAGGAGACAAGTATTATCT  
TTAAATCTAAATGGGTGCAATTCATTAAATGAAAAAATTACAGCATCTTTTGGCCTTCTGGCCCATACACAGAGGG  
AAGCATACGCACCTCGGATATCTTTGAGGCTTCCAGACCTCCATGGTTTACTCCCAGATCACAGCAAGACTGTT  
CTGAATACCTCAGATTTCTCCTTGACAGGCTCCATGAAGAAGAAAGATCTTGAAAGTTTCAGGCCTCACACAAGC  
CTTCTGAAATTTCTGAAATGCAGTGAACCTCTTTACAGGAAGTAGCTAGTAAAGCAGCAGTACTAACAGAGACCC  
CTCGTACAAGTGACGGTGAGAAGACTTTAATAGAAAAAATGTTTGGAGGAAAACTACGAACCTACATACGTTGTTT  
GAACTGCAGGAGTACCTCACAAAAAGTGAAGCCTTTACAGATCTTTTCGCTTTCCTTTTGTCTTCTCTCTTTG  
GAAAAACATGTCTGTCCAAAGATCCAGCATCATCACCCAGTATACAAGATGGTGTCTAATGCAAGCCCTCTGTACCC  
GGTCCCTTCAGAAAGAACCCAGTAGTTTATAATCCAACAACAGCTGCCTTCATCTGTGACTCAGTGTGTAATGAAAAA

CCATAGGCAGTCCTCCTAATGAGTTTTACTGTTCTGAAACACACTTCTGTCCCTAACGAATCTAACGAAGATTCTTGT  
TAATAAGATGTACCTCAGAAACCAGGAGGTGAACCCACACCTTCAGTAACTGACTTACTAAATATTTTTGGCT  
CCAGAGATTCTTACTGGTGATAACCAATATTATTGTGAAACTGTGCTCTCTGCAAAATGCTGAGAAACTATGC  
AAATCACGGAGGAACCTGAATACCTTATCTTACTCTCCTGAGATTTTCATATGATCAGAAGTATCATGTGAGAAG  
GAAAATTTAGACAAATGTATCAGTCCACTGGTTTTGGAGTTGCCAGTTAAAGAAATTACTTCTTCTTCAATTGT  
CAGAAAGTTGGTCTGTAGATGTTGACTTCAGTTCAGTATGAGTGAACCTTGTCTAAATAATTAAGCCCTTCAGGGAC  
TGATGAAGCTTCCCTGCACAAAATTGGTGCCCTATCTATTAAGTTCCGTTGTGGTTCACTCTGGTATATCCTCTGAA  
AGTGGCATTACTATTCTTATGCCAGAAATATCACAAAGTACAGACTCTTCATATCAGATGTACCCAGCTCTGAGG  
CTCTGGCATTAGCATCCTCCAGAGTCATTTACTAGGGAGAGATAGTCCAGTGCAGTTTTTGAACAGGATTTGG  
AAAATAAGGAAATGTCAAAGAAATGGTTTTTATTAATGACAGTAGAGTGACATTTACTTCAATTCAGTCAGTCCAG  
AAAATTACGAGCAGGTTCCAAAGGACACAGCTTATGTGCTTTTGTATAAAACAGCATAGTACTAATGTGTTAA  
GTGGTAATAACCCCAACCAAGTGGACTCTGGATAAATGGAGACCCACCTCTACAGAAAGAACTTATGGATGCTATAA  
CAAAAGACAAATAACTATATTTACAGGAACAAGAGTTGAATGCTCGAGCCCGGCCCTCCAAGCTGCATCTGCTT  
CATGTTCAATTCGGCCCAATGGATTTGATGACAACGACCCACCCAGGAAGCTGTGGACCAACTGGTGGAGGGGT  
GGAGGAGGATTAATACAGTTGGCAGACTCGTATTTTGA

FIG. 1S

>SGPR429\_SEQID\_16  
ATGGCCCCGCGGCTGCAGCTGGAGAAGGCGGCTGGCGCTGGCGGAGACGGTGGCGCCGAGGAGGTGTC  
GCAGGAGCATATCGAGACCGCTTACCGCATCTGGCTGGAGCCCTGCATTCGGCGGTGTGCAGACGAACTGC  
AAAGGAAATCCGAATTGCTTGGTTGGTATTGGTGAGCATAATTTGGTTAGGAGAAATAGATGAAAATAGTTTTTCATA  
ACATCGATGATCCCAACTGTGAGAGGAGAAAAGAACTCATTTGTGGCCCTGACTAACCTTGGAGCCACTTGT  
ATGTCAACACATTTCTCAAGTGTGTTTCTCAACTTGGAGCTTCGGCAGGCACTCTACTTATGTCCAAGCACTTG  
TAGTGACTACATGCTGGGAGACGGCATCCAAGAAAGAAAGATTATGAGCCTCAAAACAATTTGTGAGCATCTCCA  
GTACTTGTTCCTTGTGCAAAACAGTAATAGGCGATACATTGATCCATCAGGATTTGTAAAGCCTTGGGCCTG  
GACACTGGACAACAGCAGGATGCTCAAGAAATTTCAAGCTCTTTATGTCTCTATTGGAAGATACTTTGTCTAAC  
AAAAGAATCCAGATGTGCGCAATATTGTTCAACAGCAGTTCTGTGGAGAAATATGCCTATGTAACTGTTTGCACCCA  
GTGTGGCAGAGAGTCAAGCTTTTGTCAAAATTTTATGAGCTGGAGTTAAATATCCAAGGCCACAAACAGTTAAACA  
GATTGTATCTCGGAATTTTGAAGGAAGAAAATTAGAAGGAGACAATCGCTATTTTTCGAGAACTGTCAAAGCA  
AACAGAAATGCAACAAGAAAGATTCGACTTCTTAGCCTTCCCTTGCACCTGAACTTGCAGCTAATGCGTTTTGTCTT  
TGACAGGCAAACTGGACATAAGAAAAGCTGAATACCTACATTGGCTTCTCAGAAAATTTGGATATGGAGCCTTAT  
GTGGAACATAAAGGTGGTCCCTACGTGTATGAACCTCAGCGCAGTCCCTCATACACAGAGGAGTGAGTGTATTCT  
GGCCACTACATCGCCCACTGAAAGATCCACAGTCTGGTGAATGGTATAAGTTTATGATGAAGACATAGAAAAG

FIG. 17

ATGAGGGGAAGAAATTACAACTAGGGATTGAGGAAGATCTAGAACCCTTCTAAGTCTCAGACACGTAAACCCAAG  
TGTGGCAAGGAACCTCATTGCTCTCGAATGCATATATGTTGGTTATAGACTGCAAACTCAAGAAAAGCCCAACA  
CTACTGTTCAAGTCCAGCCTTCTTCAAGAGCTGGTAGATCGGGATAATCCAAATTTGAGGAGTGGTGATTGA  
AATGGCTGAGATGCGTAAGCAAAAGTGTGGATAAAGGAAAAGCAAAACACGAAGAGGTTAAGGAGCTGTACCAAA  
GGTTACCTGCTGGAGCTGAGCCCTATGAGTTTGTCTCTCTGGAATGGCTGCAAAAGTGGTTGGATGAATCAACAC  
CTACCAAACCTATTGATAATCACGCTTGCCCTGTGTTCCCATGACAAGCTTCAACCGGATAAAATATCAATTATGAA  
GAGGATATCTGAATATGCAGCTGACATTTTCTATAGTAGATATGAGGAGGTCCAAGACTAACTGTGAAAGCCCT  
GTGAAGGAATGTGTAGTAAGACGTTGTGCATATTGCGTCTGAAGAACCACTAAATGAAGATTATAAACTGTT  
AATAATCTGCTGAAGCAGCAGTAAAGGGCGATGATTTTGGTGGGAAGTCTCTCTTGGGAGTTGGCGCA  
GCTAGCTCTTGAACAGCTGGATGAGCAAGATGGTGATGCAGAACAAAGCAACGGAAGATGAACGGTAGCACCT  
TAAATAAGATGAATCAAGGAAGAAAGAAAGAGAGGAGAAATTAATTTAATGAAGATATCTGTGTCCACA  
TGGTGAGTTATGCATATCTGAAAATGAAAGAAGGCTTGTCTAAAGAGGCTTGGAGCAAACTGCAGCAGTACTT  
TCCAAAGGCTCTGAGTTTCCAAGTTACAAAGAGTGTCTTACAGTGCAGATTTTAGAAAGAGAGGGGAAGA  
AAATGAAGCCTTACATAAGATGATTGCAAAAGCAGCAAAAGACTTCTCTCCAAATTTGTTCCAGGATAAAACAGA  
CCGTGCTCAGTAACCTGGCCAGAGGATACGGATGTCTCTACATCGTGTCTCAGTTCTTTGTAGAGAGTGGCG  
GAAATTTGTTAGAAAGCCTACAAGATGCAGCCCTGTGTCTCAGTTGGGAACAGTGTCTTTGTGTCCACCGG  
GGCCTCATGTTTACATTTGCTTCCATGACCAAGAAAGATCTAAACTTATAGCTCTCATATGCCCCAGTGAGTGG  
CAAATGATACAAAAGCTCTTTGTTGGATCATGTAAATTAATCAGAGAAATGAAGTGGGAGATGTAAACCTT  
CAGAAACACAGTATATTTCTGAGCCCAACTCTGTCCAGATGCAGAGAGGCTTATTGTGTACGACGAGAGGG  
ACCTGCGTGAATACACTCAAGCCACCATCTATGTCCATAAAGTTGTGGATAATAAAAGGTGATGAAGGATTCCG  
CTCCGGAACCTGAATGTGAGTAGTTCTGAACAGAGGAGGACAAAGGAAGCTAAACCAGATGGAGAAAAAGAT  
CCAGATTTTAATCAAGCAATGGTGAACAAAGCGGCAAAAGATATCCCATCAAAATATATAGCCTATCAAAAGC  
AAGTTATTCGCCGAAGTATCGACATAGAAAAGTTCTGTGTGAGAAAGCAGTCTCTGTTCTGCTAATCAGACGT  
TAAAGAAATTGAAAATTCAGATCATGCATGCAATTTTTCAGTTGCTCTTTTGACCAGAAATTTGTCAATTGATGAAAG  
ATTTTAAGTGATGACTGTGCCACCCTAGGCACCCTTGGCGTCAATCTCTGAATCTGTCAATTTTATTGAAGGCTGATG  
AACCAATTGCAGATTATGCTGCAATGGATGATGTGATGCAAGTTTGTATGCCAGAAAGGGTTTAAAGGTACTG  
GTCCTTGGACATTAA

>SGPR503\_SEQID\_17  
ATGCTGAGCTCCGGCCGAGCGCGGCGATGACCGCGGCCGACAGGGCCATCCAGCGCTTCTCGGACCGGG  
GCGGCCGTGAGATATAAGTCAATGAAGAACTGGGAGTTATAGGTGGAATTTGCTGCTCTTGCAGCAGGAAT  
ATATGTTATTTGGGTCCCATACAGAAAGAAAGAGCGTAGAAAAGGGCTTGTGCCTGGCCTTGTAAATTIAGG



FIG. 1V

TCCTGCGGTTGGCCTGCCGATCCTCAGCACAGTGGCAGCCCTGAGGAAGATGGTTGCAGGAAGG  
 AGGCGTCCCTGCAGATGAGGTGATCTTGGTTGAACGTATCCAGTGGAATCCAGCGGTCTTTCTTTGATGAAGA  
 GGACCTGAATACCATCGCAGAGGAGATAATGTGTATGCCCTTTCAAGTTCCCTCCCTCACCCAGCGGGACTC  
 TCTCAGCTCATCCACTGGGTCTGCGCCTCCCAACGCTGGCAGCCCGTGGGCCCAGCGATTCTCCCTCTCT  
 CTCCACAGTGAGAGCAAGGTGCTAATCTCTTCTGTAACTTGTGGGTGAGGCGAGCAGGCTAGCAGGTTTGG  
 GCCACCCCTTCTGATAAGGGAAGACAGAGCTGTTCTGGGCCAGCTCCAGCAGTCTATCCTCAGCAAGGTCC  
 GCCATCTTATGAAGAGTGAGGCCCTGTACAGAACCTGGGGTCTCTGTTCTCCATCCGTGTTGTGGGACTCTCT  
 GTGGCCTGCAGCTATTTGTCTCCGAAGGACAGTCGGCCCTCTGTCACTGGGCAGTTGACAGGGTTTGCATCT  
 CAGGAGGCCAGGAGGCCCTCCACATGTCAAGCTGGCGGTGGAGTGGATAGCTCTGTCAAGGAGCGCCTGTT  
 GGGAGCCTCCAGGAGGAGCGCAGGATGCCGACAGTGTGTGGCAGCAGCAGCAGCGCATCAGCAGCAC  
 AGCTGTACCTTGATGAATGTTTTTTCAGTTCTACACCAAGGAGGAGCAGCTGGCCAGGATGACGCTGGAAGTG  
 TCCTCACTGCCAAGTCTGCAGCAGGGGATGGTGAAGCTGAGTTGTGGACGCTGCCGTGACATCCTCATCATCC  
 ACCTCAAAGGTTCTGCCAGGTGGCGAGAGAGAACAAGCTCTCCACGCTGGTGAAGTTCCGCTCTCTGGA  
 CTCACATGGCTCCCATGTGGCCAGAGAACAGCCCTGAGGCAGGACTGGGCCCTGGCCTTCCCTGGA  
 AGCAGCCGACTGCCTGCCACCAAGTTACCCGCTGGACTTCTGTACGACCTGTATGCCGTCTGCAACCACCAT  
 GGCAACCTGCAAGTGGCATTACACAGCCTACTGCCGAACTCTCTGATGGCCAGTGACAGTTATGATGA  
 CAGCAGGTGGAACCGCTTCGAGAAGATGAGGTCAACACAGAGGGGCTTATATCCTGTTCTATCAGAAGCGGA  
 ACAGCATCCCTCCCTGGTCAGCCAGCAGCTCCATGAGAGGCTTACCAGCTCTCCCTGTCTGATCACTGGCTC  
 TTACGGCTCGGAGCCACGCTGCAGCACAAAGGGGAGCCCTGCTGTCTGGAGCTCTGCCCTTCCCTTCCC  
 TGCCCCAGGTTCTGACTCTCCCATCTTCAACCAACAGCCCTCTGCAATCAGGAAAAGGAGGTTGGAGCCCAGG  
 CGTTTGTACGGGGCGTGAAGGCAGAGCATTAGCATGAAGGCACCCACCATTTCCCGAGCCCAAGCAGGAC  
 CATTCAAGACCATGCCCTCTGCGGTGTCCTTTGGATCCAAAGGAGAAACCAACAGGTGCCCTCCGTCGAGTTGGTG  
 GAGTACTTGAATCCAGACGAAGACCTCGGTCCACGAGCCAGTCCATTGTGTGCTGTTGACGGGCACTGCGG  
 GTGAGGATGAGAAGTCAGCATCGCCGAGGTCCAAGTCGCCCTTCTGTCTAACAGCGAAGATGTTGGCGGGC  
 CATTGAAGAGGTCAGCGGGGTGCCCTGTCCCTGGCTCAACCAACCACTGTCTGGCCCTGGAAACTCA  
 GATGGTCCAAACACAGCAAGGAACTCAAGGAAAATGCAGGGCAGGACATCAAGCTTCCAGAAAAGTTGACCT  
 GCCTCTCACTGTGATGCCCTTCACTGGAGCATGAGAAACAGCTCGACCGAGGGCCAGAGGCCATGAACCTGG  
 AAGGAGAGCTTCCAGATGGGAAGCAAAAGCAGCCCACTCCCTTATATGGATTCTCTGGAACAGCAAGA  
 CAGTCGCCGAGGCACCTCTGAGCTAGACAGACCCCTGCAGGGGACACTCACCTTCTGAGGTCCTGTTTCGG  
 AAGAAGGAGAAACAGGAGGAATGAGAGGGCAGAGGTCTCTCCACAGGTGCCCTCCCTGCTCCCTGGTGGCG  
 GGCTGAGCCCTGCCATGACGGGAGGCTCCAGGCTCACCTCTGCCCTCAGGATCCAGAGGGCCTGGCCA  
 GGGCCTGGCAGCCGGCTCGAGAGGGATGTCTGTCAGCCCCCAGCTCTCTCCGCTCCCTCGTAAGCCA

GCAGGGCCCGAGAGGCAGTGCACACTGCGCATGTCAAAAGGACTGTTCCAGGGAGCAGGCTTCTTATGGCAC  
CTTTCAGAGAGTCAAATATCACACTCTTTCTTTAGGTGAAAGAAACCTTACCGGAGTCCAGCTTTTGA

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ATGCAGCTCGTCATCTTAAGAGTTACTATCTTCTTGCCCTGGTGTTCGCCGTTCCAGTGCCCCCTGCTGCAGAC  
CATAAAGGATGGGACTTTGTTGAGGGCTATTTCCATCAATTTTCTGACCAAGAAGGAGTGCCTACTCTTACC  
CAGGAGACACAACACAGCTCCTGCAACAATTCATCGGAATGGGACAGACCTACTTGACATGCAGATGCATGC  
TCTGTACACCAAGCCCACTGTGGGTGCTGATGGTCCGACACCTCCATCTCGCCAGGAAGATGCAAGTGG  
AATAAGCACACTCTAACTTACAGGATTATCAATTACCCACATGATATGAAGCCATCCGAGTGAAGACAGTATAT  
ATAATGCAGTTTCCATCTGGAGCAATGTGACCCCTTTGATATTCAGCAAGTGCAGAATGGAGATGCAGACATCA  
AGGTTTCTTCTGGCAGTGGCCCATGAAGATGGTTGGCCCTTTGATGGCCAGGTGGTATCTTAGGCCATGCC  
TTTTACCAAAATCTGGAATCCTGGAGTTGTCCATTTTGACAAGAATGAACACTGGTCAGCTTCAGACACTGGAT  
ATAATCTGTTCTGTTGCAACTCATGAGATTGGCAATCTTTGGGCTGCAGCACTCTGGGAATCAGAGCTCCA  
TAATGTACCCCACTTACTGGTATCACGACCCTAGAACCTTCCAGCTCAGTGCCGATGATATCCAAAGGATCCAGC  
ATTTGTATGGAGAAAAATGTTTCATCTGACATACCTTAA

FIG. 1W

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ATGAAGGTGCTCCCTGCATCTGGCCTTGCTGTCTTCTCTCATCATGGCTTTGAAGTTTCCACTGCAGCCCCCTCC  
CTAGTTGCAGCTCCCCAGACCTGGAGGAACAACCTACCGCTCGCACAGGCGTATCTTGACAAATATTACAC  
AAATAAAGAAAGACACAGATTGGTGAGATGGTTGCAAGAGGAAGCAATTCATGATAAGGAAGATTAAAGGAGCT  
ACAAGCGTTCTTTGGCCTCCAAGTCAACGGGAAGTTAGACCAGACCACATGAACGTGATCAAGAAGCCTCGCT  
GTGGAGTTCCTGATGTGGCCAAATATCGCCTCTTCCCTGGTGAACCCAAATGGAAAAAAATACTTTGACATACA  
GAATATCTAAATACACACCTTCCATGAGTTCTGTGAGGTGGACAAGCAGTGGAGATGGCCTTGCAGGCCCTGG  
AGTAGCGCCGTCCCTCTGAGCTTTGTGAGAAATAACTCAGGAGAAGCGGATATTAATGATATCTTTTGAATAATGGA  
GATCAGGGGATTCTATCCATTCTGATGGCCCTCGGGGACTCTAGCCCATGCAATTTGCTCTCTGAGAAGGCCT  
GGGAGGAGATACACATTCGACAATCCTGAGAAGTGGACTATGGGAACGAATGGTTTAAATTTGTTTACCGTTGC  
TGCTCATGAATTTGGCCATGCCCTGGCCCTGGCCATTCACAGACCCATCAGCACTGATGTACCCAACTTATAA  
GTACAAGAATCCCTATGGATTCCACCTCCCAAGATGATGTGAAGGATCCAGGCATTATACGGACCTCGGAA  
AGTATTCCTGGGAAGCCCACTCTGCCCATGCCCTCCATCACAAGCCATCCATCCCTGACCTCTGTGACTCCA  
GCTCATCCTTTGACGCTGTGACAATGCTGGGAAGGAGCTCCTGCTCTTCAAGGACCGGATTTTCTGGAGACGG  
CAGGTTCACTTGGGACAGGAATTCGGCCCAAGCACTATTACAGCTCCTTCCCCAGCTCATGTCCAATGTGGA  
TGCAGCTTACGAAGTGGCTGAGAGGGGCACTGCTTACTTCTTCAAGGTCCCCCACTACTGGATAACAAGAGGAT

FIG. 1X

TCCAAATGCAAGGTCTCTCGGACTATTTATGACTTTGGATTTCGAAGGCACGTGCAGCAATAGATGCTGCTG  
TCTACCTCAGGGAGCCACAGAACCCCTTTCTTTGTGGAGATGAATACTACAGCTACGACGAAGGAAAAGG  
AAAATGGAAGAAAGACTATCCAAAGAATACTGAAGAAGATTTTCAGGAGTAAATGGCCAAATCGATGCTGCTGTA  
GAATTAATGGCTACATTTACTTCTTTTCAGGACCAAAACATACAAGTATGACACAGAGAAGGAAGATGTGGTTA  
GTGTGGTGAATCTAGTTCTCTGGATTGGTTGCTAA

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ATGAACGTGCGCTGCAGGAGCTGGAGCTGGCAGCAACATGGTGAGTACAAACGGGCCACGCTTCGGGATG  
AAGACGCACCCGAGACCCCGTAGAGGGCGGGCCCTCCCGGACGCCATGGAGTGGGATTCAGAAAGGGA  
CAAGACAGCTGTAGGCTACGCACGCAGCTGGAGCTGCTTAGCAGGTGCCTCTCTACTGCTGGCTGCACCTG  
CTTCTGGCTGCCCTGTGGCCCTAGGGTCCAGTACCACAGAGACCCATCCACAGCACCTGCCCTTACAGAGG  
CCTGCATTGAGTGGCTGGAATACTCTGGAGTCCCTGGACCGAGGGGTGAGCCCTGTGAGGACTTTTACCA  
GTTCTCCTGTGGGGCTGATTGAGGAACCCCTGCCCGATGGGCGTTCTCGCTGGAACACCTTCAACAGC  
CTCTGGGACCAAAACCAGGCCATACCTGAAGCACCTGCTTGAAACACCACTTCACTCCAGCAGTGAAGCTGA  
GCAGAAGACACAGCGCTTCTACCTATCTTGCTACAGGTGGAGCGCATTTGAGGAGCTGGGAGCCCACTG  
AGAGACCTCATTGAGAAGATTGGTGTGGAACATTACGGGGCCCTGGACCAAGACACTTTATGGAGGTGT  
GAAGGCAGTAGCAGGACCTACAGGGCCACCCATTCTTCAACCGTCTACATCAGTGTGACTCTAAGAGTTCCA  
ACAGCAATGTTATCCAGGTGACCAAGTCTGGGCTCTTCTGCCCTCTCGGGATTACTACTTAAACAGAACTGCCA  
ATGAGAAAGTGCTCACTGCCATCTGATTACATGGAGAACTGGGATGCTGCTGGTGGCGGCCACCTC  
CACGAGGAGCAGATGCAGCAGGTGCTGGAGTTGGAGATACAGCTGGCCAAACATCACAGTGCCCCAGGACCAG  
CGCGCGACGAGGAGAAGATCTACCACAAGATGAGCATTCGGAGCTGCAGGCTCTGGCGCCCTCCATGGACT  
GGCTTGAGTTCCTGTCTTCTTGTCTGTCACCATTTGAGTTGAGTGACTCTGAGCCTGTGCTGTATGGGATGG  
ATTATTGCAGCAGGTGTCAGAGCTCATCAACCGCACGGAACCAAGCATCCTGAACAATTACCTGATCTGGAACC  
TGGTGCAAAAGACAACCTCAAGCCTGGACCGACGCTTTGAGTCTGCACAAGAGAAGCTGCTGGAGACCCCTCTAT  
GGCAGTAAGAAGTCCGTGTGCCGAGGTGGCAGACCTGCATCTCCAACACGGATGACGCCCTTGGCTTTGCTTT  
GGGTCCCTCTTCGTGAAGGCCACGTTGACCGGCAAGCAAGAAATTGCAGAGGGGATGATCAGCGAAATCC  
GGACCGCATTTGAGGAGCCCTGGACAGCTGTTGGATGGATGAGAAGACCCGCCAGGCAAGGAGAA  
AGCAGATGCCATCTATGATGATTGGTTTCCAGACTTTATCCTGGAGCCCAAGAGCTGGATGATGTTTATGA  
CGGTACGAAATTTCTGAAGATTCTTTCTCCAAAACATGTTGAATTTGTACAACCTCTCTGCCAAGGTTATGGCT  
GACCAGCTCCGAAGCCTCCAGCCGAGACCAAGTGAGCATGACCCCCCAGACAGTGAATGCCTACTACCTTC  
CAACTAAGAATGAGATCGTCTTCCCGCTGGCATCCTGCAGGCCCTTCTATGCCCGCAACCAACCCCAAGGCC  
CTGAACCTCGGTGGCATCGGTGTGTCATGGGCCATGAGTTGACGCATGCCCTTTGATGACCAAGGGCGCGAGTA

TGACAAAGGAACCTGCGGCCCTGGTGGCAGAAATGAGTCCCTGGCAGCCTCCGGAACCACACGGCCTGC  
ATGGAGGAACAGTACAATCAATACCAAGTCAATGGGAGAGGCTCAACGGCCGACAGCCTGGGGGAGAAC  
TTGCTGACAAACGGGGCTGAAGGCTGCCTACAATGCTTACAAAGCATGGCTGAGAAAGCATGGGGAGGAGCA  
GCAACTGCCAGCCGTGGGCTACCAACCACAGCTCTTCTTCGTGGATTGCCAGGTGTGGTCTCGGTC  
CGCACACCAGAGCTCTACGAGGGCTGTGACCGACCCACAGCCCTGCCGCTTCCGCTGCTGGGC  
ACTCTCCAACTCCCGTGACTTCTGCGGCACTTCGGCTGCCCTGTGCGCTCCCCCATGAACCCAGGCGAGCT  
GTGTGAGGTGTGGTAG

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ATGCCGGAGAAAGGCCCTTCGAGCGGCTGCCGATGTCTCCCCCATCAACTGCAGCCTTTGCCTCAAGC  
CCGACTTGCTGGACTTCACCTTCGAGGGCAAGCTGGAGCCCGCCAGGTGAGGCAGCGACTAATCAGAT  
TGTGATGAATTGTGCTGATATTGATATTATTACAGCTTCATATGCACCAGAGGAGATGAAGAAATACATGCTACA  
GGATTTAACTATCAGAAATGAAGATGAATAAGTCACCTTGCTTTCCCTAGTACTCTGCAACACAGGTACGGGAACCT  
TAAAGATAGATTTTGTGGAGAGCTGAATGACAAATGAAAGGTTTCTATAGAAGTAAGTACTACCCCTTCTGG  
AGAGTGGCTATGCTGTGTAAACAGTTTGAGGCTACTGATGCCCGAAGGCTTTCTTCTGCTGGATGAGC  
GTGCTATCAAGCAACTTTTGATATCTCATTTGTTGTTCTTAAAGACAGAGTAGCTTTTATCAACATGAATGTAAAT  
GACCGGAACCATACCTGATGATGAAATTTAGTGAAGTGAAGTTTGCCCGCACACCTGTTACATCTACATAT  
CTGGTGGCATTGTTGTGGTGAATATGACTTTGTAGAAACAAGGTCAAAAGATGGTGTGTGTGTGTTTAC  
ACTCCTGTTGGCAAAGCAGAAAGGAAATTTGCATTAGAGGTTGCTGCTAAACCTTGCCCTTTTATAACGACT  
ACTTCAATGTTCCCTTATCCTTACCTAAATTTGATCTCATTTGCAGACTTTGCAGCTGGTGCCATGGAGAA  
CTGGACCTTGTTACTTATAGGAGACTGCATTGCTTATTGATCCAAATAATCCTGTTCTTATCCCGCCAGTGG  
GTTGCTCTGTTGTGGGACATGAACCTTGCCCATCAATGGTTGGAAATCTTGTTACTATGGAATGGTGGACTCAT  
CTTTGGTTAAATGAAGTTTTGCATCCTGGATTGAATATCTGTGTAGACCACCTGCTTCCAGAGTATGATATTT  
GGACTCAGTTTGTCTGATTACACCCGTGCCAGGAGCTTGACGCCTTAGATAACAGCCATCCTATTGAAG  
TCAGTGTGGGCCATCCATCTGAGGTTGATGAGATATTTGATGCTATATCATATAGCAAAAGGTGCATCTGTCTATCC  
GAATGCTGCATGACTACATTTGGGGATAAGGTAAAAAATACTTAAGTATT

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ATCGGCCCGCCCCGATTGCGCTGTGGCTGGCCCTGGTCTTGGCCCTGGCCCTGTCCGCCCGGGCTGTG  
GGGTGGGCCCGCGTCCGAGCCCCCATCTATGTACAGAGCTGGGCCGTCCAGGTGTCCAGGGTAACCGGGAG  
GTCGAGCGCCTGGCACGCAATTCGGCTTCGTCAACCTGGGGCCGATCTTCCCTGACGGGAGTACTTTACCT  
GCGCACCGGGCGTGTCCAGCAGTCCCTGACCCCGCACTGGGGCCACCACTGCACCTGAAGAAAAACCC

FIG. 1Y

FIG. 1Z

CAAGGTGAGTGGTTCAGCAGCAGCGCTGCAGCGGGGTGAACGCTCTGTCGTGGTGCCACGGACCC  
 CTGGTTCTCAAGCAGTGGTACATGAACAGCGAGGCCCAACCAGACCTGAGCATCTCTGCAGGCCCTGGAGTCAG  
 GGGCTGTACGGCCAGGCATCGTGGTCTCTGTGTGACGATGGCATCGAGAAGGACACCCGGACCTCTGG  
 GCCAACTACGACCCCTGGCCAGCTATGACTTCAATGACTACGACCCGACCCCGACCCCGCTACACCCCA  
 GCAAAGAGAAACCGGACGGACCCGCTGTGCTGGGAGGTGGCCGATGGCCAAATGGCTTCTGTGGTG  
 TGGGGTGCCTTCAACGCCCGAATCGGAGCGTACGGATGCTGGACGTTACCATCACCGATGTCATCGAGGC  
 CCAGTCGCTGAGCCTGAGCCGAGCAGCATCCACATTTACAGCGCCAGCTGGGTCCCGAGGACGACGGCCG  
 CACGGTGAGCGCCCGCATCTCACCGCGAGGCCCTCCGGCGTGGTGTGACCAAGGGCCGCGGGGCT  
 GGGCAGCTCTTCACTGGCCCTCGGCAACGGCGCTGCACTACGACAACTGCAACTGCGACGGCTACACC  
 AACAGCATCCACACGCTTTCCTGGGAGCAGCACACCCAGAGGCCGCTGCCCTGTGTAAGCAAGCCTGCG  
 CCTCACCCCTCACCACTACAGCAGCGGGCTGGCCACCGACCCCAAGATCGTACACGACCTGCATCA  
 CGGTGCACAGACACAGGACCTCGGCTCAGCCCACTGGCGCGGCATGATGCCCTAGCGCT  
 GGAGGCCAACCGTTCTGACGTGAGAGACATGCAGCACCTGGTGGTCCGCGTCCAAAGCCGCGCACCT  
 GCAGGCCGAGACTGGAGACCAACGGCGTGGGCGCCAAGTGAGCCATCACTACGGATACGGGCTGCTGGA  
 CGCCGGGCTGCTGGTGACACCGCCCGACCTGGCTGCCACCCAGCCGAGAGGAAGTGCGCCGTCCGGGT  
 CCAGAGCCGCCACCCCATCTGCCGCTGATCTACATCAGGGAACGTATCGCCTGCGCCGCGCTCCAC  
 AACTCCATCCGCTCGTGAGCACGTGCAGGCGCAGCTGACGCTGTCTTACAGCCGGCGGAGACCTGGAG  
 ATCTCGCTACAGCCCCATGGCACGCGCTCCACACTCTGTGGCCATACGACCTTGGACGTCAGCACTGAAG  
 GCTACAACAACTGGGCTTTCATGTCCACCCACTTCTGGGATGAGAACCCACAGGGCGTGTGACCCCTGGGCCTA  
 GAGAACAGGGCTACTATTTCAACACGGGACGTTGTACCGCTACACGCTGCTCTATGGACGGCCGAGG  
 ACATGACAGCGGCTACAGCCCCAGGTGACCAAGCGCGTGTGTGACGGGACACAGAGGGCTGT  
 GCCAGGCGTGTACGGCCCGCTACATCCTGGGACAGCTCTGCCCTGCGCTACTGCCCCCGGGTTCTTCAA  
 CCACACAAGGCTGGTACCGCTGGGCTGGCACACGGCGCGCCGCTGAGGGTCTGCTCCAGCTGCCA  
 TGCTCTCTGCTACACCTGCCGCGGCTCCCGAGGACTGCACCTCTGTCCCCCATCTCCACGCTGGAC  
 CAGCAGCAGGGCTCCTGCATGGGACCCACACCCCGACAGCCCGCCCGCTTAGAGCTGCCGCTGTCCC  
 CACCACCGCTGCCAGCCTCGGCCATGGTGTGAGCCTCCTGGCCGTGACCCCTCGGAGGCCCGCTCTGC  
 GGATGTCCATGGACCTCCCACTATACGCTGTGCTCTCCCGTGCCAGGGCCACCCCCACCAACCCAGGTCT  
 GGCTGCCAGCTGGAACCTGA

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GGCCCCGGCAGGCAGGGTGGTGCGCAGGGAGGCGTAGCACTGCTCTTCCCTCCGCGCTCCCCTCAGGGCC  
 AGGGGCCAGGACCCCGGAGCGAGCGGATGGAGCGCCACCTGTAGGGGCTCCAGGATCCCCAGCGGCC



CGCACTGCTTCCAAAAGCACTACTATCCCTCCGAGTGGACGGTCCAGCTGGCGAGCTGACTTCCAGGCCAACT  
 CCTTGGAACTGCGGGCTACAGCAGTCGTTACAAAGTGCAGGACATCATTTGTAACCTGACGCACCTGGGGT  
 TTTACGCAATGACATTGCCCTGCTGAGACTGGCCTCTTCTGTACCTACAAATGCGTACATCCAGCCCATTTGCAT  
 CGAGTCTTCCACCTTCAACTTCGTGCACCGCCGACCTGCTGGTGACCGGCTGGGGTTAATCAGCCCCAGT  
 GGCACACCTCTGCCACCTCCTTACAACTCCGGGAAGCACAGGTACCATCTTAAACAACACAGGTGTAATTAC  
 CTGTTTGAACAGCCCTCTAGCCGTAGTATGATCTGGATTCCATGTTTGTGCTGGTGTGAGGATGGCAGTGTA  
 GACACCTGCAAAAGGTGACTCAGGTGACCCCTTGGTCTGTGACAAGGATGGACTGTGGTATCAGGTTGGAATCGT  
 GAGCTGGGAATGAGCTGCGGTCAACCCAAATCGGCCCTGGTGTCTACACCAACATCAGTGTGTACTTCCACTGGA  
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 GCTCCC

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 ATCAGCTGTCGCGCTTCTCTCCAGGTGGGCGAGGGTTTCGGGCTGGTGGAGCATGTGCTGGGACAGG  
 ACAGCATCCTCAATCAATCCAAACAGCATATTGCTTGCATCTTCTACACACTACAGCTATTGTTAGTCTTCAAGC  
 CGCTCAGCGTGCCTGTGGACAGCGTGGCCCCGGCCCCCAAGCCTCAGGAGGGCAACACAGTCCCTGGCGA  
 GTGGCCCTGGCAGGCCAGTGTAGGAGGCAAGGAGCCACATCTGCAGCGGCTCCCTGGTGGCAGACACCTG  
 GGTCTCACTGCTGCCACTGCTTTGAAAGGCAGCAGCAACAGAACTGAATTCCTGTGTCAGTGGTCTGGGT  
 CTCTGCAGCGTGAGGACTCAGCCCTGGGCGCGAAGAGGTGGGCTGGCTGCCCTGCAGTTGCCCAGGGCCT  
 ATAACCACTACAGCCAGGGCTCAGACCTGGCCCTGCTGCAGCTCGCCACCCACGACCCACACACCCCTCTG  
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 GATGCTCCTGGACCTACGCAATCTGCGCCTGCGTCTCATCAGTCGCCCCACATGTAACTGTATCTACAACCA  
 GGTGCAECAGCAGACCTGTCCAACCCGGCCCGGCTGGGATGCTATGTGGGGCCCCCAGCCTGGGTGCA  
 GGGCCCTGTCAAGGAGATTCGGGGGCCCTGTGCTGTGCCCTGAGCCTGACGGACACTGGTTCAAGGCTGG  
 CATCATCAGCTTTGCATCAAGCTGTGCCCAGGAGGACGCTCCTGTGCTGTGCTGACCAACACAGCTGCTCACAGTT  
 CCTGGCTGCAGGCTCGAGTTCAAGGGGCAGCTTCTGGCCAGAGCCAGACCCCGGAGATGAGTGATGA  
 GGACAGCTGTGTAGCCTGTGGATCCTTGAGGACAGCAGGTCCCGAGGACAGCACCTCCCATGGCCCTGG  
 GAGGCCAGGCTGATGCACAGGGACAGCTGGCCTGTGGCGGAGCCCTGGTGTGAGAGGAGGCGGTGCTAACT  
 GCTGCCCACTGCTTCAATTGGGGCCAGGCCCCAGAGGAATGAGCGTAGGGCTGGGACAGACCCGAGGAG  
 TGGGGCCTGAAGCAGCTCATCTGCTGATGGAGCCTACACCCACCTGAGGGGGGCTACGACATGGCCCTCCTGC  
 TGCTGGCCCCAGCCTGTGACACTGGGAGCCAGCCTGCGGCCCTCTGCCTGCCCTATCCTGACCACACCTGCC

FIG. 1BB

TGATGGGAGCGTGGCTGGGTTCTGGACGGGCCCGCCAGGAGCAGGCATCAGCTCCCTCCAGACAGTGCC  
CGTGACCCCTCTGGGGCTAGGGCTGCAGCCGGCTGCATGCAGCTCCTGGGGTGATGGCAGCCCTATTCTG  
CCGGGATGGTGTACAGTGTGGTGAGCTGCCAGCTGTGAGGCCCTGTCTGGGCACCACTGGTG  
CATGAGGTAGGGGCACATGTTCTCTGGCCGGCTGCACAGCTTCGGAGATGCTTGCCAGGCCCGCCAGG  
CCGGCGGTCTTACCGCGCTCCCTGCCTATGAGGACTGGGTACGAGTTTGACTGGCAGGTCTACTTCGCCG  
AGGAACGAGCCGAGGCTGAGCCTGGAAGCTGCCTGGCCAACATAAGCCAACCAACCAAGCTGCTGA

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ATGAGAGCTCCGCACCTCCACCTCTCCGCCGCTCTGGGCCCGGGCTCTGGCGAAGCTGCTGCCGCTGTGA  
TGGCGCAACTCTGGCCGAGAGGGCGCTGCTCCCCAAACGACACGCGCTTGGACCCCGAAGCCATATG  
GCGCCCGTGGCGCGGCTCGAGCCCTGCAGGCTCGCTCTTCAACGGCCTCTGTTCCACTGCGCGG  
GTGCTCTGGTGACCAAGTGGGTGCTGACGGCCGCGCACTGCGGAAACAAGCCACTGTGGCTCGAGTAG  
GGATGACCACCTGCTCTTTCAGGGCGAGCAGCTCCGCCGAGCAGTCTGCTGTGTCCATCCCAAGTAC  
CACCAGGCTCAGGCCCATCTGCCAAGCGAACGGATGAGCACGATCTCATGTTGCTAAAGCTGCCAGGC  
CCGTAGTGCCGGGCCCGCTCCGGCCCTGCAGCTTCCCTACCGCTGTGCTCAGCCCGAGACCAGTGCC  
AGGTGCTGGTGGGCACCAACGCGCCGGAGAGTGAAGTACACAAGGGCCTGACCTGCTCCAGCATCAC  
TATCCTGAGCCCTAAAGAGTGTGAGGTCTTCTACCCCTGGCGTGGTCACCAACAACATGATATGTGCTGACTGG  
ACCGGGGCCAGGACCTTGCCAGAGTGACTCTGGAGGCCCTGGTCTGTGACGAGACCCCTCCAAGGCATCCT  
CTCGTGGGTGTTTACCCCTGTGGCTCTGCCAGCATCCAGCTGTCTACACCCAGATCTGCAATAACATGTCTCT  
GGATCAATAAAGTCATACGCTCCAACTGA

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TGGTGGTGGTCTGACAGCCGCACACTGCTTCCGAAGAACCTATTAGACATGGCCGTGGTAAATGTCACTGT  
GGTCATGGGAACGAGAACATTGAGCAACATCCACTCGGAGAGAAAGCAAGTGCAGAGGTCAATTATTCACAAATA  
TTACAAACGCCCCAGCTCGACAGTGACCTCTCTGCTTCTACTTGCCACACCAAGTGCAATTCAGCAATTTCAA  
AATGCTGTCTGCTGACGAGGAGGAGGACCTGGGACTGGTGTGGATGGCACAGTGGGTAAACGACCAAT  
GGGTATGACCAATATGATGACTTAACATGCACCTGGAAAGCTGAGAGTGGTGAGATTAGCCGGAAGAATG  
TGCCAAGAGGGTAACCAAGCTGTCCAGGAACATGATTGTGCTTGGAACGAACCAAGCACCAATGGCAGGGC  
CCAGGAGAGTAGGGGGCCTCTGTTTGCAGAAAGCAACATGGTACCAAGCTGGGTATTATCAG  
CTGGGTGTGGGTGTGGCCAGAAACATGCCTGGAGTGTACACCGAGTTGTCCAATTATCTGCTTTGGATCG

FIG. 1DD

AGAGGAAGACTGTGCTGGCAGGGAAGCCGTATAAGTATGAGCCAGACTCTGTGTACGCTTTGCTTCTCTCACCC  
TGGCCATCCTGTACTGTATTTTGTGATGCTTCTATTATCCT

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ATGGAATAATATGCTGCTTTGGTTGATATTTTACCCCTGGGTGACCCTCATTGATGGATCTGAAATGGAATGG  
GATTTTATGTGCACTTGAGAAAGGTACCCCGGATTGTCAAGTAAAGGACTTTCATCTCACAGCCCGCATTT  
GAGGCAGATGCTAAGATGATGTTAAATACAGTGTGTGCATCGAATGCCAGAAAGAACTCCCAACTCCAGCCT  
TTCTGAATTGGAGGATTATCTTTCTATGAGACTGTCTTTGAGAAATGGCACCCGAACTTAACAGGGTGAAAGTT  
CAAGATTTGGTTCTTGAGCCGACTCAAAATATCACCAAAAGGGAGTATCTGTTAGGAGAAAGAGACAGGTGTAT  
GGCACCGACAGAGGTTACAGCATCTTGACAAAGGTTCTTAACCAATTTCCCTTTACGACACAGCTGTGAAGCTT  
TCCACGGGCTGTAGTGGCATTCTCATTTCCCTCAGCATGTTCTAACTGCTGCCACTGTGTTCTATGATGGAAG  
GACTATGTCAAAGGGAGTAAAAGCTAAGGGTAGGGTTGTTGAAGATGAGGAATAAAAGTGGAGGCAAGAAAACG  
TCGAGGTTCTAAGAGGAGCAGGAGAGAAAGTGTGTGTGACCAAGAGAGGTTACCAAGAGCATCTGCCG  
GAGAGAGCGAAGGTGGGAGAAAGAAATACTGCCGGGTCAGAGGATTGCCGAAGGAGGCCCTTCTCT  
TTCAGTGGACCCGGTCAAGAAATACCCACATCCGAAGGGCTGGCAGCAGGAGGCATGGGGACGCTACCTT  
GGACTATGACTATGCTCTTCTGGAGCTGAAGCTGCTCACAAAGAAATACATGGAATCAGCCCAAC  
GATCAAGAAATGCCTGGTGAATGATCCACTTCTCAGGATTTGATAACGATAGGCTGATCAGTTGGTCTATCG  
GTTTTGCAGTGTCCGACGAATCCAATGATCTCTTTACCAATACTGCGATGCTGAGTCGGCTCCACCGGTTT  
GGGGTCTATCTGCTCTGAAGATCCAGACAAAGAAATTGGAAGCGCAAAATCATTCGGTCTACTCAGGGC  
ACCAGTGGTGATGTCCACGGGTTCAGAAGGACTACAACGTTGCTGTTGCGCATCACTCCCTAAATACGCC  
CAGATTTGCCCTCTGGATTACGGGAACGATGCCAATTGTGCTTACGGCTAA

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CACTCCCTCCCAGACTGCAGCCGAACCCCTGGTCCCTCCACAAATGTGGCTTCTCCTCACTCTCTCCTCTG  
CTGGCATCCACAGCAGCCAGGATGTTGACAAAGTTGCTGGAAGGTGACGAGTGTGACCCCACTCCAGCCAT  
GGCAAGTGGCTCTCTACGAGCGTGGACGCTTTAACTGTGGCGCTTCCCTCATCTCCCACTGGGTGCTGTCT  
GCGGCCCACTGCCAAAGCCGCTTCATGAGAGTGCCTGGGAGAGCACAACTGCGCAAGCGCGATGGCCCA  
GAGCAACTACGACACAGTCTCGGGTCATTCACACCCGCTACGAAGCGCGCAGCCACCGCAACGACATCA  
TGTTGCTGGCCTAGTCCAGCCCGCAGCCTGAACCCCGGCTGCGCCCGGCTGCTACCCACGCGTTGCC  
CCACCCGGGGAGGCCTGTGTGCTGCTGGGCTGGGCGCTGGTGTCCCAACAGAGCCTGGGACCGCTGGGAG

FIG. 1EE

CCCCGGTCAAGTGAGTCTCCAGATACGTTGCATTGTGCCAACATCAGCATTAATCTCGGACACATCTTGTGA  
 CAAGAGTACCCAGGGCCCTGACAAACACCATGGTGTGTGAGGCGGAGGCGAGGCGAGGCGAGATCCTG  
 TGAGGTGACTCTGGGGACCCCTGGTCTGTGGGCATCCTGCAGGCAATGTCTCTGGGTGACGTCCCT  
 TGTGACAAACACCAAGCCTGGTGTCTATACCAAGTCTGCCACTACTTGGAGTGGATCAGGGAAACCATGAA  
 GAGGAACTGA

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 CAGCCGCGTTGTAGGTGCCAGGATGCTGCTGCAGGGCGCTGGCCTTGGCAGGTGAGCCTACACTTTGACCAC  
 AACTTTATCTGTGGAGTTCCTCGTCAGTGAGAGTTGATACTGACAGCAGCAGCAGTGCATACACCGACCTG  
 GACTACTTTTTCATATACTGTGTGGCTAGGATCGATTACAGTAGTCAAGGAAACGTGTGAAGTACTACGT  
 GTCCAAATCGTCATCCATCCCAAGTACCAAGATACAACGGCAGAGTCGCCCTTGTGAAACTGTCCTCTCAAGT  
 CACCTTCACTTCTGCCATCCTGCCATTTGCTTGCCAGTGTCAAAAGCAGTTGGCAATCCACCCCTTTTGTGG  
 GTGACCGGATGGGAAAGTTAAGGAAAGTTACAGATAGAGATTACCAATCTGCCCTTACGGAAGCAGAAGTACC  
 CATTATTGACCGCCAGGCTTGTGAACAGCTCTACAATCCCATCGGTATCTTCTGCCAGCACTGGAGCCAGTCAT  
 CAAGGAAGACAAGATTTGTCTGGTGATCTCAAAACATGAAGGATAGTTGCAAGGTGATTTCTGGAGGGCCTC  
 TGTGCTGTACATTTGATGGTGTATGGATCCAGACAGGAGTAGTAAGCTGGGATAGAAATGTGTAATCTCTTC  
 CTGGAGTCTACACCAATGTAATCTACTACCAAAATGGATTATGCCACTATTTCAAGAGCCAACTAGACTT  
 CTCTGACTTCTTGTCCCTATTGTCTCTACTCTCTGCTCTCTGCTGCCCTCTCTGCTTGGACCTAACACT  
 ATACACAGAGTAGGCACTGTAGCTGAAGCTGTTGCTTGCATACAGGGCTGGGAAGAGAAATGCATGGAGATTTAG  
 TCCCAGGGGCAGATAA

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 ATGATGTACGCACCTGTTGAATTTTCAGAAGCTGAATTTCTCAGAGCTGAATATCAAAGAAAGCAGCAATTTGGG  
 ACTCAGTACGGCTAGCTCTTTTCACATTAGCAATTTAGCAATCATAGGAATTGCAATTTGGTATTGTTACTCATTTT  
 GTTGTGAGGATGATAAGTCTTTCTATTACCTTGGCTCTTTTAAAGTCACAAATATCAAATATAAAGAAAATATGG  
 CATAAGATCTTCAAGAGAGTTTATAGAAGGAGTCATCAGATTGAAGAATGATGCTAGGATATTCGACATCT  
 TCTGTAGCGGTCGATTTATCAAAATCTCATGTTATCAAAATTAAGTCCAGATGAACAAGGTGTGGATATTTATAG  
 TGCTCATATTTTCGATACCCATCTACTGATAGTGTGAACAAATCAAGAAAATTTGAAAAGGCTTTATATCAAAGT  
 TTGAAGACCAACAATTGCTTTGACCATAAACAACCATCATTTAGACTCACAGCTGTGGAATAAGGATGACAT  
 CTTCAAACATGCCATTACAGCATCCTCTTCTACTCAAAGAAATGTCCAAGGAAGGAAACAGCTATGGAAGGGG  
 AATGGCCATGGCAGGCCAGCCTCCAGCTCATAGGGTCAGGCCATCAGTGTGGAGCCAGCCTCATCAGTAACAC

ATGGCTGCTCAGCAGCTCACTGCTTTGGAAAAATAAGACCCAACTCAATGGATTGCTACTTTTGGTGCAAC  
TATAACACCACCCGAGTGAACGAATGTGAGGAAAATTATTCTTCATGAGAAATTACCATAGAGAAACAATGAA  
AATGACATTGCTTTGGTTAGCTCTCTACTGGAGTTGAGTTTCAATATAGTCCAGAGAGTTTGCCTCCAGACT  
CATCTATAAAGTTGCCACCTAAACAAGTGTTCGTACACAGGATTTGGATCCATTGTAGATGATGGACCTATACA  
AAATACACTTCGGCAAGCCAGAGTGAACCATAGCACTGATGTGTAAACAGAAAGGATGTGTATGATGGCCT  
GATAACTCCAGGAATGTTATGTGCTGATTATGGAAGGAAAAATAGATGCATGTAAAGGAGATTCTGGTGGACC  
TCTGGTTTATGATAATCATGACATCTGGTACATTGAGTATAGTAAGTTGGGACAAATCATGTGCACTTCCCAA  
AAACCTGGAGTCTACACCAGAGTAACTAAGTATCGAGATTGGATTGCCTCAAAGACTGGTATGTAG

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AGAATAGCAGAGGGTCTGGATGCTGAGGAAGGAGAAATGGCCCTGGCAAGCTAGCCTTCCACAGAAACAATGTCTA  
CCGACGGGAGCCACATGGCTTAGTAACAGCTGGCTTATCACTGCTGCTCACTGCTTCCATAGGGTCCATGATC  
CCAAAGAAATGGAATGTTATTTAAGTAACCCACAACACAGTCAATATCAAGAATGTTATAATTCAAGAAAACTAC  
CATTACCCTGCACACGATAATGACATTGCTGTTGTGCATCTATCTTACCAGTGTATATACAAGCAACATCCAAA  
AAGCATGTCTTCCAGATGTTAATTATATATCTTATACAAATTCAGAAAGCAGTGGTTACTGCGATGGGATCATTTAAA  
CCTTTACGAACAACCTTCTAATGTACTCCACAAGGGATTAGTGAAGATTATAGATAATAGGACCTGCAACAATGGG  
GAGGCAGATGCGAGAGTCATCACATCTGGAATGTTGTGTCGGGTTCTGGAGCCACGTGTGGATGCCTGCC  
AGGGTGACTCTGGTGGACCACTGTTGGTACAGATTCTAAAGGCATCCTTGTAAAGGTTCCCTGCTGCTGATTGA  
AAGCTGGAGTAAATGAACGTGCTCTTCCAAACAAGCCTAGTGTCTACACTCAAGTGACATACTAT

FIG. 1FF

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ATGGTCAGCAAGGGGAGTTGCTGCAGAGCCAGAGCCACACTATTGTGAGGACAGTGAAAGAGGCCCCAACA  
CCCTCACAGGTCGGGCAGCCTTCTAGAGGAGGTGGCATTGAGTGGCATGGAGTTCCGGGATGCAGCGG  
TGAAGGTGCGTGAAGCCCATGAGGAGGCGGCCGGGAGGGGCGGCGGAGGCAAGAGGGCTGTGCCGG  
GACCCAAAGCGACGCGAGGGGTACGAGAGGGGCTGCGCGGGTGGACGCTGGAGCAGGAGACCCAGG  
GGAGATGCTTAGAGGATAAAATGAGCGGCGAGATGAAGAGATACCTCAGGCTGGCACCGAGGAAAGGACGC  
TCCCAATAGACAGCAACACCTGAACCGGTATCAGCAGCTTCCCGTAAGATCTCAGGAGCTGGCGGAGG  
GGCTGGAGCAGGCACACTAAGAGGCAAAATGGCAGAGTTAACTGGTCTATGGCCTTCAAGGACCTGCGGCT  
GGTCATGAAGAGCGCCTCAACTCTGTGTCAGCAGGGCCAAAGAGGCATTGGCTGGGATGCTGCTGCTT  
CTCTTCGTGTTGACCAATTTCTCAGACCTCCCCCGCCCTGCAGGTACGGGAGGAGTTGGAGGCTTGCGC  
GTTTAGAGTGCAGGTGGGCGAGCTGAGGCTCTATGAGGACGACGAGGAGGTTGAGATCGTCCGT  
CACCCCAAGTACAACGAGAGCCTGTCTGCCAGGGCGGTGCGGACATCGCCCTGCTGAAGCTGGAGGCCCCG



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ATGCTCCTGTTCTCAGTGTTGCTGCTCCTGTCACGAACTCAGCTCGGTCCACGGACTCCTCTCCTCC  
AGAGGCTGGAGTGGCTATCTAGGCAGGGCTAGGGAGCCACCGCCCTCAGCCCTCATCCCCCAGCCC  
AGTCAGTGAATGTGTCACAGATCTATTTTCAGGGAAGAACTCGGTATTCAGAAATCACAGGGGATGGAGG  
CGGAGGTGGTGAGTTCCGTGGCAGGTGAGTATTCAGGTAAGAAGTGAACCTTTCTGTGGCGCTCCATCCTC  
AACAAAGTGTGATTTCTCACTGCGCTCACTGCTTATATTCGAGGAGCTGTTTCCAGAGAACTGAGTGTCGTG  
CTGGGGACCAACGACTTAACTAGCCCATCCATGGAAATAAAGGAGGTGCGCCAGCATCTTTCACAAAGACTTT  
AAGAGAGCCAAACATGGACAATGACATTGCCTTGCTGCTGGCTTCGCCCATCAAGCTCGATGACCTGAAGGT  
GCCCATCTGCCCTCCCACGAGCCCGCCCTGCCACATGGCGCAATGCTGGTGCGAGGTTGGGGCCAGAC  
CAATGCTGCTGACAAAACCTCTGTGAAAACGGATCTGATGAAAGCGCCCAATGGTCATCATGGACTGGAGGAGT  
GTTCAAAGATGTTTCCAAAACTTACCAAAAATATGCTGTGTGCCGGATACAAGAATGAGAGCTATGATGCCTGCA  
AGGGTGACAGTGGGGGCTCTGGTCTGCACCCAGAGCCTGTTGAGAAAGTGTTACCAAGTGGGCATCATCAG  
CTGGGGAAGAGCTGTGGAGAGAAGAACACCCAGGGATATACACCTCGTTGGTGAACATAACCTCTGGATCG  
AGAAAGTGACCCAGCTAGAGGGCAGGCCCTTCAATGCAGAGAAAAGGAGGACTTCTGTCAAAACAGAAACCTATG  
GGCTCCCCAGTCTCGGAGTCCCAGAGCCAGGATCCTGGCTCCTGCTCTGTCCCCCTGTCCCCATG  
TGTTGTTCAGAGCTATTTGTACTGA

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ATGGCTTCCTCTGGCTCCTCTCCTCTCCCTTGTGGGGCCGCCCTTTGGCTGGGGTCCCCGCCATCCA  
CCCTGTGCTCAGCGGCTGTCCAGGATCGTGAATGGGAGGACGCCGTCCCGGCTCCTGGCCCTGGCAGGT  
GTCCCTGCAGGACAAAACCGGCTTCCACTTCTCGGGGGCTCCCTCATCAGCGAGACTGGGTGCTCACCGCT  
GCCCCACTGCGGGTCAAGACCTCCGACGTGCTGTGGCTGGGAGTTTGACCAGGGCTCTGACGAGGAGAAC  
ATCCAGGTCTGAAGATCGCCAAGTCTTCAAGAACCCCAAGTTCAGCATTCTGACCGTGAAACAATGACATCAC  
CTGCTGAAGCTGGCCACACCTGCCCGCTTCTCCAGACAGTGTCCGCCGTGTGCTGCCAGCGCGACGACG  
ACTTCCCCGCGGGACACTGTGTGCCACCACAGGCTGGGGCAAGACCAAGTACAACGCCAACAAAGACCCCTGA  
CAAGCTGCAGCAGGACCCCTGCCCCCTCCTGTCCAATGCCGAATGCAAGAAGTCTCTGGGCGAGGAGATCAC  
GACGTGATGATCTGTCCGGGGCAGTGGCGTCTCCTCTGCACTGGTGACTCTGGAGGCCCCCTGGTCTGCC  
AGAAGGACGGAGCCTGGACCCCTGGTGGCAATTGTCTCTGGGCGAGCCGCACTGCTCTACCACACGCCCG  
CTGTGTACGCCCGTGTACCAAGCTCATACCCCTGGGTGCAGAAGATCCTGGCCGCCAACTGA

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 ATGAGCCCACTGTGGCTGACGTACACCTCGTGCCAGGACAAACCAAGGAAGTCCCGCTCTGGATGCCGCGT  
 GCTGTCGAGCGCCAGCATTTGGCGTGGTGCCACCAAGCTTGTCTCTACCTGAGTCCCTTTGGGAGG  
 AATGAACAACCTCAGACACGCTGCCCTTAAGAGCTGCAACACTCCCTGGAAAGTCTACAGCGTCACTCCTGAAG  
 CAAGCAAGACCACGAACCCACCAAGGAAGAAATTCGAAACACATCCGAACATCAGCAAGAAACAACCTCCGA  
 CACACCATTTTAAAGAAATGTAACTCAGCCCTTCTCTACACAGGCTTCCACGTGACCAACACGCGCGAG  
 CTGCGGGAAATCCGGTGGACCAAGCATTTGCGGGGAGACCTCGACTATACCGCACGCTGACGCCCCACC  
 CTGGAGGCACTGCTGCATTTCTGCTGGACCCCTCCAGACGCTGAGCCTGGGCTGGAGGAGGCTATTGC  
 AGCAGGGATCCGGGCAAGCTGCGGAGCACGGCATCTCCCTGGCTGCTATGCCACAATTGTGTCGGCTGA  
 GCTCACAGGGAGACATAAGGACCCCTTGGCAGAAAGAGACTTCAATCAGCGCTGTCCAGGAACTCCTTTT  
 CCTGCGGGAACAGCCAGTGTGACCAAGGTGAACCCGAGTGTGACGACCAAGGAGGACTGCTCCGATGGGTC  
 CGACGAGCGCACTGCGAGTGTGGCTTGCAGCTGCTGAGGATGGCCGCGAGGATCGTGGCGGCGATGGA  
 AGCATCCCCGGGGAGTTCCGTGGCAAGCCAGCCTTCGAGAGAACAGGAGCACCTTCTGTGGGCGCGCATC  
 ATCAACGCCAGGTGGTGTCTGCTGCTCACTGCTTCAATGAGTTCAGACCCGACGAAAGTGGTGGCCTA  
 CGTGGTGCACCTACCTCAGCGGCTCGAGGCCAGCACCGTGGGCGCAGTGTCCAGATCGTCAAGCA  
 CCCCCTGTACAACGCGGACACGGCGACTTTGACGTGGCTGTGGAGCTGACCAAGCCCTCTGCCCTTCGGC  
 CGCACATCCAGCCCGTGTCCCTCCCGCTGCCACACACATCTCCACCCAGCAAGAGTGCCTGATCTCAG  
 GCTGGGGCTACCTCAAGGAGGACTTCGTAAGCATCTTCCTCGGCTGCAATGGTCAAGCCAGAGGTGCTGCA  
 GAAAGCCACTGTGGAGCTGCTGGACCAAGCAGTGTGCCAGCTTGTACGGCCATTCACTCACTGACAGGATG  
 GTGTGCGCTGCTACCTGACGGGAAGGTGGACTCCTGCCAGGTGACTCAGGAGGACCCCTGGTCTGCGAG  
 GAGCCCTCTGGCCGTTCTTTCTGGCTGGCATCGTGAAGTGGGAATCGGCTGTGGGAGCCCGGCGTCCAG  
 GGTCTATGCCCGAGTCAACAGGCTACGTGACTGGATCCTGGAGGCCACCAAGCCAGCATGCCCTCTGGC  
 CCCACCATGGCTCCTGCCCTGCCCGCCAGCACAGCCTGGCCCAAGTCTGAGAGCCCTGTGCTCAGC  
 ACCCCACCAATCGATGCAGGCCCTCAGTACCGTGCCTTGTACTGGTCAAGTTCCTAAGCTACAAGAAATG  
 TGGGGCCAGGCTGCAATGGAGAAGCCACCCGGTCTGGGCGGTTCCGAGCTGCCCTCCGGGAGGTGC  
 CCTGGCAGGTCAAGCTGAAGGAAGGTCCCGCACTTCTGCGAGCAACTGTGGTGGGAGCCGCTGGCTGC  
 TGTCTGCCGCCACTGCTTCAACCAACAGGTTGGAGCAGTTCCGGCCACCTGGGCACTGCGTCCCTCCT  
 GGGCTGGGCGGAGCCCGTGAAGATCGGGTGGGCGGGTAGTGTGACCCCTCTACAACCTGGCAT  
 CCTGGACTTCGACCTGGCTGCTGAGCTGGCCAGCCCTGGCTTCAACAAATACATCCAGCCTGTCTGCC  
 TGCCCTGGCCATCCAGAAGTTCCTGTGGGCGGGAAGTGCATGATCTCCGATGGGAAATACGCAAGG  
 AAATGCCACCAAGCCGAGCTCCTGCAGAAAGGCTCCGTGGGCATCATAGACCAGAAACCTGTAGTGTCTCT

ACAACTTCTCCCTCACAGACCGCATGATCTGCGCAGGCTTCTGGAAGGCAAGTCGACTCCTGCCAGGGTGAC  
 TCTGGGGCCCCCTGGCTGCGAGAGGCCCCCTGGCGTGTATCTGGCAGGGATCGTGAGCTGGGGTATTG  
 GCTGCGCTCAGGTTAAGAAGCCGGCGTGTACACGCGCATCACAGGCTAAGGGCTGATCCTGGAGATCAT  
 GTCTCCAGCCCTTCCCATGTCTCCCTCCGACCAAGGATGCTGGCCACCACAGCCCGGAGGACGACA  
 GCTGGCTCACAGTCCCGGGGCCACACCCAGCAGACCCCTGGGGCTGCCAGCAGGGTGACGGGCCAA  
 CCTGCCAACTCAACCTTATCTGCGGTGAGCACCACTGTAGGGACAGACGCCATTTCAGACGCCCGGAGG  
 CCACCACACACCCAGCTACCAAGTGTGGCTGGCCGCCGCCCTCACAGGATTGTGGCGGCAGCG  
 CAGCGGCCGTGGGAGTGGCGGTGCGAGGTGAGCTGTGGCTGGCGGCCGGGAACACCGTTGCGGGGCC  
 GTGCTGGTGCGAGAGGTGGCTGTCTGGCGGCGACTGCTTCGACGTCTACGGGACCCCAAGCAGTGG  
 GCGGCTTCTAGGCACGCCGTTCTGAGCGGCGGAGGGCAGCTGGAGCGCGTGGCGGCATCTACAAG  
 CACCGTTCTACAATCTCTACACGCTCGACTACGAGTGGCGTGTGGAGCTGGCGGGCGCGTGGTGGCA  
 GCCGCTGGTGCTCCATCTGCCCTGCCGAGCCCGCGCCGACCCCGACGCGCAGCGCTGCGTCATCA  
 CCGCTGGGCTCGGTGCGGAAGGAGGCTCCATGGCGGCGAGCTGCAGAGCGCGCTGCCCTCCTC  
 AGCAGCAGACCTGCCCGCTTCTACCCAGTGCAGATCAGCAGCCGCACTGCTGTGCCGGCTTCCCGCAGG  
 GTGGCGTGACAGCTGCTCGGTGACGCTGGGGACCCCTGGCTGCAGGGAGCCCTCTGGACGGTGGGTGC  
 TAACTGGGTCACTAGCTGGGGCTATGGCTGTGGCGGCCCACTTCCAGGTGTCTATACCCGGGTGGCAGC  
 TGTGAGAGGCTGGATAGGACAGCACATCCAGGAGTGA

>SGPR521\_SEQID\_39

ATGGCAAGATCCCTTCTCCTGCCCTGCAGATCCTACTGCTATCCTTAGCCTTGGAAACTGCAGGAGAAGAAGC  
 CCAGGGTGACAAGATTATTGATGGCGCCCCCATGTGCAAGAGGCTCCACCCCATGGCAGGTGGCCCTGCTCAGT  
 GGCAATCAGTCCACTGCGGAGCGCTCCTGTCAATGAGCGCTGGTGTCTACTGCCGCCACTGCCAAGATGA  
 ATGAGTACACCGTGACCTGGCAGTGATACGCTGGCGACAGGAGCTCAGAGGATCAAGGCCCTCGAAGTC  
 ATTCCGCCACCCCGCTACTCCACACAGACCCCATGTTAATGACCTCATGCTCGTGAAGCTCAATAGCCAGGCCA  
 GGCTGTATCCATGTTGAAGAAAGTCAGGCTGCCCTCCCGCTGCGAACCCCTGGAACCCCTGTACTGTCTCC  
 GGCTGGGGCACTACCACGAGCCAGATGTGACCTTTCCTCTGACCTCATGTGCGTGGATGTCAAGCTCATCTC  
 CCCCCAGGACTGCACGAAGGTTACAGGACTTACTGGAAAATTCATGCTGTGCGCTGGCATCCCCGACTCCA  
 AGAAAACGCCCTGCAATGTTGACTCAGGGGACCGTTGGTGTGACAGAGGTACCCCTGCAAGGCTGTGCTCTG  
 GGGAACTTCCCTTGGGGCCAAACCAATGACCCAGGAGTCTACACTCAAGTGTGCAAGTTCACCAAGTGGATAA  
 ATGACACCATGA AAAAGCATCGCTAA

FIG. 1JJ

>SGPR530\_1\_SEQID\_40  
 GTCCTCACAGTGTGTGGGAAGCCTAAGTGGTGGGAAGATCTATGGTGGCGGAGCGCAGCAGCTGGCCAGT  
 GGCCATGGCAGGCCAGCTGCTCTACTGGGGCTGCACCTCTGTGGAGCTGTCTCATCGACTCCTGCTGGCT  
 GGTATCAACTACCCACTGCTTCTCAACAATCCAGGCCCGAAGAACTATCAGGTTCTGTTGGAAACATCCA  
 ACTGTATCATCAAAACCCAGCACACCCAGAAGATGTCTGTGCACCGGATCATCACCCATCCAGACTTTGAGAAGCT  
 CCACCCCTTTGGGAGTGACATTGCCATGTTGCAGCTGCACCTGCCATGAACCTTCACTTCTACATTGTCCCTGT  
 CTGCCCTCCATCCGGGACATGCAGCTGCCAGTAACGTGCTCTGTTGGATAACCGGCTGGGGAATGCTCACCC  
 GAAGACCATAAGAGGGTGCAACTGTCAACACCTTCTATCTCCAGGAGGCAAGGTGGCCCTCATTTGAGAACAC  
 ACTCTGTAAATACCTTATATGGCAAGAACTGCAAGCGAGACCTAAGCTTTGCACGAGGAGATGCTGTGTGG  
 GGGGTACTTCTCGACAGGAAAGTCCATCTGCAAGGCGATTCTGGGGGCTCTAGTCTGTACCTCCCCAGT  
 GCCTGGGTCTGTGGGCTGGCCAGCTGGGGCTGGACTGCCGGCATCTGCCTACCCAGCATCTTCACCA  
 GGTCACTTCTCATCAACTGATTGACGAAATCATGAGGCTCACTCCTCTTTGTGACCCCGGCTGGCTCCTC  
 AC

>SGPR520\_SEQID\_41  
 ATGCTGCTGGCTGTGCTGCTGTCTACCCCTCCCAAGCTCATGTTTGCCACGGGCACCCACTGTACACAG  
 CCTGCCCCCAGCGCCCTGCAAGTCTTCACTCTCTCTTGGGGCAGAGACTGTGTTGGCCGCAACCTAGACT  
 ACGTTTGTGAAGGCGGTGCGGCAGAGGCGTCCGAGCACTGCCAATGTACGCGGGCCACGCGCCGATCG  
 TGGGGGCGAGCGCGCGCCCGGGCTGGCCCTGGCTGGTGGGCTGCAGCTCGGCGGCGAGCCTCTG  
 TCGGGCGGCTCTGTAGCGGCTCTGGGTGCTCACGGCAGCGCACTGCTTTGTAGGCTGCCGCTCGACC  
 CGCAGCGCCCGAATGAGCTTCTGTGAGTGTGACGCTGGCAGAGGGTCCCGGGGGAGCAAGCGGAGGAG  
 GTGCCAGTGAACCGCATCTGCCCAACCCCAAGTTGACCCGCGGACCTTCCACACGACCTGGCCCTGGTGC  
 AGCTGTGACGCGGTGAGCCCGGGGGATCGCGCGCCCGTGTGCTGCCCGAGAGCCCGAGAGCCCG  
 CCTGCCGGAACCGCTGCGCCATCGCGGCTGGGGCGCCCTTTCGAAGACGGGCTGAGGCTGAAGCAGTG  
 AGAGAGGCCCGGTTCCTCTGCTCAGCACCGACACCTGCCGAAGAGCCCTGGGGCCCGGCTGCGCCCCAGC  
 ACCATGCTCTGCGCGGGTACTGCGCGGGGCGTTGACTCGTGCCAGGTGACTCGGAGGCGCCCTGACC  
 TGTTCGAGCCTGGCCCCCGCCCTAGAGAGTCTCTGTTCCGAGTCACTCTGGGGGACGGCTGCGGGGAG  
 CCAGGGAAGCCCGGGTCTACACCCCGGTGGCAGTGTCAAGGACTGGCTCCAGGAGCAGATGAGCGCAGCC  
 TCCTCCAGCCGCGAGCCAGCTGCAGGGAGCTTCTGGCCTGGACCCCGCCAGAGCTGCAGGCGAGCGCC  
 GCCCGGCTCTGCGCCTTCTATGCCCGCTGTGCCCGGGTCCAGGGCGCTGTGCGCGCTGGCGCACCCAG  
 CAGTGCCTGCAGCGCGCGGCGATGCGAGCTGCGCTCGCTGGCGCACACGCTGCTGGGCTGCTGCGGAAC

FIG. 1LL

GCGAGGAGCTGCTCGGGCTCGTCCGGACTCGGGCCCTGGCCCGCCCTGGCTCTCCCCGCTCCAGCG  
 CTCAGGAGTCTCCTCTGCACCCCGCGGAGCTCGGGCTTCACTCAGGATCGGGGCTGCAGGCACCTCGGT  
 TCCGAAGCGGAGCGCGGAGAGCAAGCCAAAGCTGCCCTGGCTGAGCCCTGCGACAGAAGT  
 TGGCTGCCCTGCAGGGGCCATGCTCGATCCTGCAGGTCCCTCGAGCACCTGGCCATGAACCTTCATGA  
 GTCTTGCCAGATCTGGCTCCAAGACACTGACCGGGCTTTTCAGAGCCTGGTGCGGGCAGGCTTGGGGG  
 CCGCATGTGGCTTCAGCGGCTGTGGCTGGAGCCGCCACACTGGCTCGAGCTCCCGCGGCTGCT  
 GGTGAGGCCCTGCAGGCCCTCCGCTGGCTGCCCTGGCAGAAGGGAGCCGAGGACCCCTGGATGGATGT  
 AGGCGAGGGCCCGGCTGGAGAGGAAGGGGCCACCCACTCAACCTCAGGTACCCCGCCGAGGCAACC  
 CTGA

>SGPR455\_SEQID\_42  
 ATGAGTCCTGATATTGCACTGCTGTATCTAAACACAAAGTCAAGTTTGGAAATGCTGTTCAGCCAATCTGTCTTC  
 CTGACAGCGATGATAAAGTTGAACCGAATCTTTGCTTATCCAGTGGATGGGCAAGATTTCCAAACATCAG  
 AATATTCAAATGTCTACAAAGAAATGGAACCTCCCATCATGGATGACAGAGCGTGTAACTGTCTCAAGAGCAT  
 GAACCTCCCTCCCTGGGAAGGACCATGCTGTGTGCTGGCTTCCCTGATGGGAATGGACGCCCTGCCAGGGG  
 GACTCTGGAGGACCACTGGTTGTAGAAAGGTGGTGAATCTGGATTCTTCTGGGATAAATCTCCTGGGTAGC  
 TGGTTGTGCTGGAGTTCACTTCCCGTAAGAAACAACCATGTGAAGGCATCACTTGGCATTTTCTCCAAGTGTC  
 TGAGTTGATGGATTTATCACTCAAACTGTTCACAGTTTGGATCGGGGCCAACCCCTCTCAAAAGTGGGCTC  
 AAGGTATATAACAAAGGCCCTGAGTTCTGTCCAAGAGTGAATGGAAGCCAGAGAGATAAATAATCTGATAAA  
 ATTTACAAGTTTAGACATGGAAAGCAAGTTGGATGTGATCATGACTATGTATCTTTACGATCAAGCAGTGGAGTG  
 CTTTTAGTAAGTCTGTGGAAAAATATTGCCCTTACCATTGCTGGCAGAGACCAGTGAGGCCATGGTTCCATTT  
 GTTCTGATACAGAAGACAGTGCGAGTGCTTGGAGCTTACCGTTACTGCTGTACAGAAAGTCAGAAAGCAGGTC  
 AGGTTGTGGAGTCTGGCTATATTGGTAGAAGAGGACAAATCACTCTGCCAAGTATCCTGATTTGTATCCCAG  
 TAACACAAGGTGTCATTGGTTCAATTTGTGCTCCAGAGAAGCACATTATAAGTTGACATTTGAGGACTTTGCTGTC  
 AAATTTAGTCCAACTGTATTTATGATGCTGTTGTGATTTACGGTGATTTCTGAAGAAAGCACAAAGTTAGCTAAACT  
 TTGTGGAATGTTGACCATCACTTCAATATTCAAGTTCTAGTAACATGACGGTGATATACITTAAGAGTGATGGTAAAA  
 ATCGTTTACAAGGCTTCAAGGCCAGATTTACCAATTTGCCCTCAGAGCTTTAAACAAATTTGAACCAAGTTACC  
 TCCCCAAAACAATCCTGTATCTACCGTAAAAGCTATTCTGCATGATGTCTGTGGCATCCCTCCATTTAGTCCCCAG  
 TGGCTTTCCAGAAGATCGCAGGAGGGGAAGAGCCCTGCCCCACTGTGGCCATGGCAGGTGGGTCTGAGGT  
 TTCTAGCGGATTACCAATGTGGAGGTGCCATCATCAACCCAGTGTGGATTCTGACCGCAGCCCACTGTGTGCAA  
 TTGAAGAATAATCCACTCTCCTGGACTATTATTGCTGGGACCATGACAGAAACCTGAAGGAATCAACAGAGCAG  
 GTGAGAAGGGCCAAACACATAATAGTGCATGAAGACTTTAACACACTAAGTTATGACTCTGACATTTGCCCTAATAC

FIG. 1MM

AACTAAGCTCTCCTGAGTAACTCGGTGAGGCCAGTATGTCTCCACACAGCGCAGAGCCTCTATTT  
 CCTCGGAGATCTGTGCTGACCGGATGGGAAGCATCAGTGCAGAGCTCTCTGAATGTTTCTTATTAGATG  
 GTGGCTAGCAAGTCGCCTACAGCAGATTCAAGTGCATGTGTTAGAAAGAGAGGTCTGTGAACACACTTACTATT  
 CTGCCCATCCAGGAGGATCACAGAGAAGATGATCTGTGCTGGCTTTGCAGCATCTGGAGAGAAAGATTTCTGC  
 CAGGAGACTCTGGTGGCCACTAGTATGTAGACATGAAATGGTCCCTTTGTCCTCTATGGCATTTGTCAGCTG  
 GGGAGCTGGCTGTCTCAGCCATGGAAGCCGGGTGATTTGCCAGAGTGAATCTTCTTGACTGGATCCAAT  
 CAAAATCAATGGTAAATGTTTCAATGTTAATAAACAATAACCCTTTCTTTAGAGTGGTTTGGGAACAGTG  
 AGTTGTTGCTCTGAAGCAGAGCTAGAAAAGCCTAGAGGCTTTTCCACACACCACCGTATCTACTGGATTATAGA  
 GGAAGACTGGAATGTTCTTGGGTGCTCAGAGTTTCAGCAAGCAGTATGGCAAAATTTACCATTGAGTATCTGTCA  
 CTCCTGGGTCTCCTGTGTCAAGACTCAGTTCTAATTATTAAGAAGAACACACAGTAAGAGAAAGACGGCA  
 GGTGGATTACATGGAAGAAGACTTTACTCAATGACTTTCATGAGTCTGGACCGCTGGTGAGGTGACATTCCAT  
 GCCCTTGACGAGGTGCAATTTGGTATAAGCTATATTGCTTGAAGTCTTAGTCCAAAGGACAGTAAATAACC  
 AGACTTTCCCAAAGTTCAACAGAGAGCACTTGTCCTTGTGAGGATGTTCTCTGACCAAGCCAGAGGGATC  
 ATGCAGATCCCAAGAAATTCACAGAACTACTATGGTTGCCAATGGAGATTAGTAGCCCTTTAAATCACATCA  
 TTCAGCTTAATATTAACTTCCCGATGAAGCCAAACAATTTGTCTGTGTCATGTCATCTGCGTGTTACGAAGG  
 ATTTGGACCCAGGAAAAAATTAAAGTAGAATGTTGATGAGCACTGAGCTTTCTTGGTTCCCTAAGCCAAATTCAGC  
 ACCAAGAAGACCCACAGCTTCTTGTGGGAGACTGCAGTATCTATGAAAATGATGATACTTCTATCTTCTTGCCC  
 TACAGAACACCTGTTACCATGCCTCATGAGGTGTTTTGAGAAATTAATAA

>SGPR507\_2\_SEQID\_43

ATGAAATATGTCTTCTAATTTGGGTGTCCTCGCTGGGACATTTTCTTTGCTGACTCATCTGTTCAGAAAGAAGACC  
 CTGCTCCCTAATTTGGTGACCTCAAGTCTCACTTCAACCCCTGTGTGGCGTCTCTCATCAACCCAGCTGGGTGC  
 TGGCCCCAGCTCACTGCTATTTACCAATCTGAAAGTATGCTGGGAAATTTCAAGAGCAGAGTCAGAGACGGTA  
 CTGAACAGACAATTAACCCCATTCAGATCGTCCGCTACTGGAACACAGTCAAGCGCCACAGGATGACCTCA  
 TGCTCATCAAGCTGGCTAAGCCTGCCATGCTCAATCCCAAAGTCCAGCCCTTACCCTCGCCACCAATGTCA  
 GGCCAGGCACCTGTCTACTCTCAGGTTTGACTGGAGCCAAAGAACAGTGGGCTTTGGCAGCTGGAGCCA  
 CCAGGCCATCTGACTCTGCACAGAGGCCAGCCATTCTGATTGGCAGAGACACAATTCACATGAACAAGGCCG  
 ACACCCCTGACTTGGGCAGAACCTGGAGGCCCCCGTGATGCTGATCGAGATGCCAAAACAGAACAAAGGAA  
 AAAGCCACAGGAATTCCTTATGTGAAATTTGTGAAAGTATTCAGCCGAATTTTGGGAGGTGGCCGTTGCTA  
 CTGTCTATCTGCAAGACAAAGCTCCAGGGAATCGAGGTGGGCACTTCATGGGAGGGACGTCGGCATCTACAC  
 CAATGTTTACAAATATGTATCCTGATTGAGAACACTGCTAAGGACAAGTGA

>SGPR559\_SEQID\_44

ATGGGGAAATGATCCGCCTGCTGTTGAAGCCCCCTTCTCATTCCGATCGCTTTTGGCCTTGATGATTTGAA  
ATAAGTCTCTGTTGCACAGATGCAGATGCTGTTGCTGCACAGATCCTGTCACTGCTGCCATTGAAGTTTTTCCCA  
ATCATCGTATTGGGATCATTGCATTGATATTAGCACTGGCCATTGGTCTGGGCATCCACTTCGACTGCTCAGGG  
AAGTACAGATGTCGCTCATCCTTTAAGTGATCGAGCTGATAGCTCGATGTACGGAGTCTCGGATTGCAAGAC  
GGGAGGACGAGTACCGCTGTGTCGGGTGGTGAGAAATGCCGTGCTCCAGGTGTTACACAGCTGCTTCGT  
GGAAGACCATGTGCTCCGATGACTGGAAGGTCACACGCAATGTTGCCGTGCCCACTGGGTTTCCCAAGC  
TATGTGAGTTACATAACCTCAGAGTGAGCTCGCTGGAGGGCAGTTCGGGAGGAGTTTGTGTCATCGATCA  
CCTCTTGCCAGATGACAAGGTGACTGCATTACACCACCTCAGTATATGTGAGGGAGGATGTGCCCTCTGCCACG  
TGTTACCTTGCACTGCACAGCCTGTGTCATAGAGGGCTACAGCTCAGCATCGTGGTGGAACATGTCC  
TTGCTCTCGAGTGGCCCTGGCAGGCCAGCCTTCAGTTCAGGGCTACCACTGTGCGGGGCTCTGTCAATCA  
CGCCCCGTGGATCATCACTGCTGCACACTGTGTTATGACTTGACTTCCCAAGTCAATGGACCATCCAGGTGG  
GTCTAGTTTCCCTGTTGGACAATCCAGCCCCATCCCACTTGGTGAGAAAGATTGCTACCAAGCAAGTACAAGC  
CAAAGAGGCTGGCAATGACATCGCCCTTATGAAGCTGGCCGGCCACTCACGTTCAATGAATGATCCAGCCT  
GTGTGCTGCCCACTCTGAAGAGAACTTCCCCGATGGAAGTGTGCTGGAGCTCAGGATGGGGGGCCACAG  
AGGATGGAGCAGGTACGCTCCCTGCTGCTGAACACGCGCGTCCCTTTGATTTCCAAAGATCTGCAAC  
CACAGGACGTGTACGGTGGCATCATCTCCCCCTCCATGCTCTGCGGGCTACCTGACGGGTGGCGTGGACA  
GCTGCCAGGGGACAGCGGGGGCCCTGGTGTCAAGAGAGGAGGCTGTGGAAGTTAGTGGAGCGGACCA  
GCTTTGGCATCGGCTGCGCAGAGGTGAACAAGCCTGGGTGTACACCCGTGTACCTCCTTCTGACTGGAT  
CCACGAGCAGATGGAGAGACCTAAACCTGA

>SGPR567\_1\_SEQID\_45

ATGGAGAGGGACAGCCACGGGAATGCATCTCCAGCAAGAACACCTTCAGCTGGAGCATCTCCAGCCCAGGCAT  
CTCCAGCTGGACACCTCCAGGCGGGCATCTCCAGCCCAGGCATCTCCAGCCCAGGCATCTCCAGCTGGGAC  
ACCTCCGGGCGGGCATCTCCAGCCCAGGCATCTCCAGCTGTACACCTCCAGCCGGGCATCTCCAGGCGG  
GGCATCTCCAGCCCAGGCATCTCCAGCCCAGGCATCTCCAGCCCAGGCATCTCCAGCCCAGGCATCTCCGGCT  
CTGGCATCACTTTCCAGTCTCATCCGGCAGGTATCATCCGCCAGGTACGCTCGGTGACAACCTCCCCAAC  
CAGAGTACCTTTAGAGCAACACCAAGTGGGGCTGTACCCATCCGATCATCTCCTGCCAGGTCAACCCAG  
CAACCAGGGCCACCGAGAGCCAGTCCAGTTCTGGCAGGGCCACACAGGGATCAGGTACAAGGAGCAGA  
GGGAGAGCTGTCCCAAGCACGCTGTTCCGTGTACGGGGTGGTGGACTGCAAGCTGAAGAGTGACGAGCTGG  
GCTGCGTGAGGTTTGAAGTGGACAAGTCTCTGCTTAAATCTACTCTGGGTCTCCCATCAGTGGCTTCCCATCT  
GTAGCAGCAACTGGAATGACTCCTACTCAGAGAAGACCTGCCAGCAGCTGGGTTTCGAGAGTGTCAACCGGACA

FIG. 12

ACCGAGTTGCCACAGGGATTTGCCAACAGCTTCTCAATCTTGAGATACAACCTCCACCATCCAGGAAGCCTC  
CACAGGTCTGAATGCCCTTCCAGCGGTATATCTCCCTCCAGTGTCCCACTGCGGACTGAGGGCCATGACCGG  
GGGATCGTGGAGGGCGCTGCCCTCGGATAGCAAGTGGCCTTGGAAGTGAAGTCTGCACTTCGGCACCCAC  
CCACATCTGTGGAGGCACGCTCATTGACGCCCAAGTGGTGTCTCACTGCCGCCCACTGCTTCTTCGTGACCCGG  
GAGAAAGTCTGGAGGGCTGGAAGGTGTACGGGGCACCAAGCAACCTGCACCAAGTTGCCGTGAGGCAGCCTCC  
ATTGCCGAGATCATCAACAGCAATTACACCGATGAGGAGGACGACTATGACATCGCCCTCATGCGGCTGTC  
CAAGCCCCGTGACCCCTGTCGCTCACATCCACCCCTGCTTGGCTCCCATGTCATGGACAGACCTTTAGCCTCAATG  
AGACCTGTGATCACAGGCTTTGGCAAGACCAGGAGACAGATGACAAGACATCCCCCTTCTCCGGGAGGT  
GCAGGTCAATCTCATCGACTTCAAGAAATGCAATGACTACTTGGTCTATGACAGTTACCTTACCCCAAGGATGAT  
GTGTGCTGGGACCTTCGTGGGGCAGAGACTCCTGCCAGGGAGACAGCGGGGGCCTCTTGTCTGTGAGCA  
GAACAACCGCTGTACCTGGCAGGTGTACCAAGCTGGGGCACAGGCTGTGGCCAGAGAAACCAACCTGGTGTG  
TACACCAAAGTGACAGAAGTTCTCCCTGGATTACAGCAAGATGGAGAGCGAGGTGCGATTACAGAAATCCTAA

>SGPR479\_1\_SEQID\_46

ATGGCTGCCCTGCTTCCGTCATGGGCCCACTCGGGCCCTCTGCCCTGGGCCCTTCTGCTGCTCCTGCTG  
TGGCCCTCCCCGGTCCAGCATTTGGTCCACAGACAGCCAGAGAACCAAGGAATCTCCCTAACTGGCAGCGT  
GGCCTGTGCTGGCCAGCATGAGGGGAAATCCTGGCGGCTCCCTCGCCCCGAGAGAAAGTGGCCGTG  
GCAGGTACGCTGCACTACGACGGCCTCCAGCTCTGGCGGCTCCATCCTCAATGAGTACTGGTGTCTCA  
GCTGCGCACTGCTTTCACAGGGACAAGAAATATCAAAATCTATGACATGTACGTAGGCTCGTAAACCTCAGGGTG  
GCCGGCAACCAACCCAGTGGTATGAGGTGAACAGGGTGATCCTGCCCCACATATGAGATGTACCACCCCAT  
CGGAGGTGACGTGGCCCTGGTGCAGCTGAAGACCCGCATTTGTTTTCTGAGTCCGTGCTCCCGTTTGCCTTG  
CAACTCAGAAGTGAACCTTACAGTGCCAAATTGCTGGCTACGGGATGGGACTAGTCTCAAAACAAGGTGAG  
ACCTCAGACGAGCTGCAGGAGGTGCAGCTCCCGCTGATCCTGGAGCCCTGGTGCCACCTGCTCTACGGACACA  
TGTCTACATCATGCCGACATGCTGTGTGCTGGGACATCCTGAATGCTAAGACCGTGTGTGAGGGCGACTCC  
GGGGGCCCACTTGTCTGTGAATTCAACCGCAGCTGTTGCAGATTGGAATTGTGAGCTGGGCCGAGGCTGCT  
CCAACCCCTGTACCCCTGGAGTGTATGCCAGTGTTCCTATTCTCAAAATGGATATGTGATAACATAGAAATCAC  
GCCCCACTCTGCTCAGCCAGCCCCCTGCTCTCTCCAGCTCTGGGGCCCACTCTCAGCGTCTCTAATGGCCATGC  
TGGCTGGCTGCTCAGTGTGTA

>SGPR489\_1\_SEQID\_47

ATGAGTCTCAAAATGCTTATAAGCAGGAACAAGCTGATTTTACTAGGAATAGTCTTTTTTGAACGAGGTAAAT  
CTGCAACTCTTTCGCTCCCCAAAGCTCCCAAGTTGTGGGCAGAGTCTGGTTAAGGTACAGCCTTGGAAATTATTTA

FIG. 100

ACATTTTCAGTCGCATTCTTGAGGAAGCCAAAGTGAGAGGGTTCCCTATCCCTGGCAGGTATCTCTGAAACAAA  
 GGCAGAAAGCATATTTGTGGAGGAAGCATGCTCTCACCACAGTGGTGATCAGGGGGCTCACTGCATTGCAAAAC  
 AGAAACATTGTGCTACTTTGAATGTTACTGCTGGAGAGTATGACTTAAGCCAGACAGACCCAGAGAGCAAACT  
 CTCACATTTGAAACTGTCAATACATCCACATTTCTCCACCAAGAAACCAATGGACTATGATATTGCCCTTTTGAA  
 GATGGCTGGAGCCTTCCAAATTTGGCCACTTTGTGGGCCCCATATGCTTCCAGAGCTCGGGAGCAATTTGAGG  
 CTGGTTTATTTGTACAACTGCAGGCTGGGCGCTTAACTGAAGTGGCGTCTCTCACAACTCTTGACAGGAA  
 GTGAATCTGCCTATTTGACCTGGGAAGAGTGTGGCAGCTCTGTTAACACTAAAGAGGCCCATCAGTGGGA  
 GACCTTCTTTGCACAGGTTTTCCTGATGGAGGAGAGACGCATGTCAGGGAGATTTCAGGAGGTTCACTCATGT  
 GCCGGAATAAGAAAGGGCCTGGGACTCTGGCTGGTCAATTTGGGAGGCTCAGGTGGGAGGATCGCTTGAGTC  
 CAGGAGTTCAAGACCAAGCCTAGGCAACAAGTGAGACTCTGTCTCACAAATAATTTCTTCAAAAATAGCCCG  
 GTGTGGCACCTGGTGAGTGAGCAGGATGTATAGTCAGCGGGCTGAGGGAAAGCTGCACTTCCAGAAAGC  
 CTCACCTATATTATGAGAGCAAGCAACGGTGTCTGGACCTGCTGTACCAGAGGAAATGCATGTGTGCT  
 CAGTTTTCCACCTAGATGTTGAGTCTTGTCAACCACAGTTACCTGTCAATGTATTTTGAAGACAGACCCCAT  
 GGAAATTTTGTGGAGAAAGCCTCCCTTCATCCATTCTTATTGGCTCTAATTTCTAAGGCTGAAATTCGTCTCTG  
 ATGCCACAGATTATGCAGCTGGTTAATCTTACCCTATAAAGCTCTTAAACCAAACTACATTCCTGGTTGCAGTTA  
 CTTAACTGTCTTTTGAAGAAAGTCTCATAACAGAGTCTAAACTATCCTGAAAACTACAGTGACAAGGCTAACTGT  
 GACTGGATTTTCAAGCCTCCAACATCACCTAAATTAAGCTTTTCAATTCAGAGCTGGAATAGAAAGTGGAG  
 ACTGCACTTCCGACTATGTACAGTGCACAGCGATGTAGAAAGGAAGAAATAGCTCGGCTGTGTGGCTAT  
 GATGTCCCAACCCCTGTGCTGAGCCCTCCAGCATCATGCTCATCAGCTTCCATTCAGATGAAACGGGACCTG  
 CAGGGGCTTTCAGGCTATAGTCTCCTTCATTCCTAAAGCAGTATACCCAGATTTAAACATCTCCATATCAGAGGAT  
 GAGTCAATGTTTCTGGAGACATGA

FIG. 1P P

>SGPR465\_1\_SEQID\_48  
 CGGTGGCCATGGCAGGCCAGTCTCCTCTACCTAGCGGGGCACATCTGTGGAGCTGCCCTCATCGACAGCAACT  
 GGGTGGCCTCTGCTGCTCACTGCTTCCAAAGATGCATCTTCCCTCCACGGGCCCGCTGTCCACTAACCCATCT  
 GATTACCGGATCCTGCTTGGGTATGACCAGCAAGCCATCCACAGAGCACAGCAAGCAGATGACAGTGAATAA  
 GATCATGGTGCACGCTGACTATAACGAGTTGCACCGCATGGGAGTGACATCACCTGTCTGAGCTGCACCATC  
 ATGTGGAATTCAGCTCCACATCCTCCCGCTGCCCTCCGGAACCAACACGCTGGCTGGCCCTGACAGCTCC  
 TGCTGGATATCTGTTGGGAATGTTACCGAGGATGTTCTTCTGCTGAGCCCTTCCAACCTCAGGAGGCAGA  
 GGTGGTGTCAATGGACAACACTGTCTGCGGATCCTTTTCCAGCCCCAGTACCCCGGCCAGCCAGCAGCAGTG  
 ACTACACCATCCACGAGGACATGCTGTGCGCTGGGACCTCATACAGGAAAGGCCATTTGCCGAGTGAATCC  
 AGGGTCCCCTCGTCTGCCCCATTAAATGGCACCTGGTTCTCTGATGGGGCTGTCTAGTTGGAGCCTCGACTGCTG

CTCACCCGTCGGTCCAGGGTCTTACCCAGGCTCCCTACTTACCAACTGGATCAGCCAGAAGAAGAGGGAGA  
GCACCCCTCCAGATCCCGCCTTGGCTCCTCCTCAGGAACACCCCGAGCCCTGGACAGCATGACCTCTCAGGG  
CATCGTCCACAAGCCCGGGCTCTGCGCAGCCCTTCTGGCTGCTCACATGTTCCCTCCTGCTGCTGATTCTCCTGG  
GGAGCCTG

>SGPR524\_1\_SEQID\_49

ATGGACAAAGAAACAGCGATGTTTCAGCCGACCTGCTGACCTGAAATATCCAATATCTCAGTCCAAGTGGTC  
AGTGCCCAAAAGAGCTGCCAGTGAGACGACCACCGTTGCCAGGAGACGACTACCATGCCAGGAAGACGAC  
CACCAAAAGACCCATTGGCAAGCCAAACCCAAAGCAATCCAAAGAAAAGTTCCCTTTTGGAAATGTACAAA  
ATAAATCATCTCTTACAGTATTTTATTCATCCTAGCAGTCATAGCCTGGACACTTCTGTGGCTGTATATCAGT  
AAACAGAAAGCAAGATGCTTTTACTTTGCTGGATGTTTCGCATCACCAACATTGAGTTTCTTCCCGAATACC  
GACAAAGGAGTCCAGGGAATTTCTTCAGTGTACGGACTGTGAGCAAGTGATAAACCTGGTTTATACAACAT  
CTGCCCTTCCAAATTTATGAGCAGTCTGTTGTCAGATGTGAGCAGCAACAACAAGCGGCTCCTTGTCC  
ACTTTTGATTGTTTTGTGTCATGCCACGTGCCAAAGGCCACATCTTCTGTGAAGACTGTGTGCCGCCATCTTGAA  
GGACTCCATCCAGACAAGCATATAACCGGACCTCTGTGGGAGCTTGCAGGGACTGGCTGTGGACATGGAC  
TCTGTGTTACTAAATGTTGATTGTTGTGTTCTTAAATAAAGAAAAGAAATGGTGTCTCTCCACAG  
ACAAAGGCTGCTCAGTACTTCTATGCAGAGCATCTGTCTCTCCACTACCCGCTGGAGATTTCTGCAGCCTCAG  
GGAGGCTGATGTGCTACTTCAAGCTGGTGGCCATAGTGGCTACCTGATTCGTCTCTCAATCAAGTCCATCCAA  
TCGAAGCCGACAACGTGTCACTGACTCCCTGACCATTTACGACTCCCTTTTGGCCATCCGGAGCAGCATCTTGT  
ACAGAAATTTGTGAACCCACAAGAACATTAATGTCAATTTGTTTCTACAATAATCTCATGTTGGTGACATTTAAGTCT  
CCTCATATACGGAGGCTCTCAGGAATCCGGGCATATTTGAGGTCAATCCAGAACAAAAGTGTGAAAACACAGTG  
TTGGTCAAAGACATCACTGGCTTTGAAGGAAATTTCAAGCCCATATTACCCGAGCTACTATCCTCCAAATGCA  
AGGTACCTGGAAATTTCAGACTTCTCTATCAACTCTTGGCATAGCACTGAAATTTCTATAACTATTCAATAACCAAG  
AAGAGTATGAAAGGCTGTGAGCATGGATGGTGGAAATTAATGAGCACATGACTGTGGCTCCTACATGGATCAT  
CAGACAATTTTTCGAGTGCCAGCCCTCTGGTTACATTCAGCTCCAGTGCAAGTTCAAGGCTTTTCAGACAAGCCA  
CTTTTGGCAGAATATGGCAGTTACAACATCAGTCAACCTGCCCTGTGGATCTTTAGATGCTCCTCCGGTTTAT  
GTGTCCCTCAGGCCAGCGTTGTGATGGAGTAAATGACTGCTTTGATGAAGTGATGAAGTGTTCGTGAGCC  
CTCAACCTGCCTGCAATACCAGCTCCTTTCAGGCAGCATGGCCCTCTCATCTGTGATGGCTTCAGGACTGTGAG  
AATGGCCGGGATGAGCAAAACTGCACCTCAAGTATTCATGCAACAACAGAACTTTAAGTGTGGCAATGATATT  
TGCTTTAGGAAACAAAATGCAAAATGTGATGGACAGTGGAATGTCAGATGGAAGTGATGAAGAAGGCTGCAC  
CTGCAGCAGGAGTTCCTCCGCCCTTACCCGCATCATCGGAGGCACAGACACCCCTGGAGGGGGTTGGCCGTGG  
CAGGTACGCCTCCACTTTGTTGGATCTGCCTACTGTGGTGCCTCAGTCATCTCCAGGGAGTGGCTTCTTCTGCA

FIG. 1QQ

ATGACATTGAACAAAAATTAAGACCTTTTTGCAGGGAAAGGACAGTGGGATTTGGACCCCGAAGCAGAAATGCTG  
AAGCCATGATGATTGCCGTTCTCATTTGTGTTGCCCTGACAGTGGTGCGAGTGACCATAGGTCTCTGGTTCAC  
TTCTAGTATTTGACCAAAAAGGAGTACTATCATGGCTCCTTTAAATTTAGATCCACAATCAATAACAATTT  
CGGACAAAGCAACACATATCAACTTAAGGACTTACGAGAGACGACCGAAAAATTTGGTGTATTCTTTGAAAAATGTAC  
CTTTCTTTTGTGTCCAGTCCAGAGGAAGATGGTGTGAAAGTAGATGTCATTATGGTGTCCAGTTCCTCCCTCTA  
CTGAACAAAGGGCAGTAGAGAGAAAGAAAAATCCAAGCATCTTAATCAGAAGATAAGGAATTTAAGAGCCTTGC  
CAATAAATGCCTCATCAGTTCAAGTTAATGTGGCCATGGTCAAGAAATGGCAATGTGGGCCAGGTTCCGGAGCA  
GGAGAGGCTCCAGGCTGGGAGCAGGTCTCGCTGGTCACCAATGAGCTCATCAACAGGGGAGTTAACTGTCC  
AAGCAAGTTGTGTAACGAGTTGTCCATTAAACGTCAACAGAAATAGCATCTGGAGTCATTGCACCCCAAGCGCG  
CCTGGCCTTGGCAAGCTTCCCTTCAGTATGATAACATCCAATCAGTGTGGGCCACCTTGATTAGTAACACATGGC  
TTTGTCACTGCAGCACACTGCTTCCAGAAGTATAAAAAATCCACATCAATGGACTGTTAGTTTGGAACAAAAAATCAA  
CCCTCCCTTAATGAAAAGAAATGTCAGAAGATTTATTATCCATGAGAAGTACCGCTCTGCAGCAAGAGATACGA  
CATTGCTGTTGTGCAGGTCTCTCCAGAGTCACCTTTTCGGATGACATACGCCAGATTTGTTGCCAGAAGCCTC  
TGATCCTTCCAAACCAATTTGACTGTCCACATCACAGGATTTGGAGCACTTTACTATGGTGGGAATCCCAAAAT  
GATCTCCGAGAAGCCAGAGTGAAAAATCATAAGTGACGATGTCTGCAAGCAACCAACAGGTGTATGGCAATGATATA  
AAACCTGGAATGTTCTGTGCCGGATATATGGAAGGAATTTATGATGCCTGCAGGGGTGATTCTGGGGACCTTTA  
GTCACAAGGGATCTGAAAGATACGTGGTATCTCATTGGAATTGTAAGCTGGGGAGATAACTGTGGTCAAAAGGAC  
AAGCCTGGAGTCTACACACAAGTGACTTATTACCGAAACTGGATTGCTTCAAAAACAGGCATCTAA

10

FIG. 188

>SGPR538\_SEQID\_51  
 ATGAGCCTGATGCTGATGACCAACCCCTATGAGGCCAGTATGCAGAGGAGGGCCAGGACCTGGATCT  
 TCAGAGCAGAGCCTGGAGACCAGCAGCATCCATTCTCAGGCGGTGCTGGCTCCATGCGACGTGGCTG  
 TGAGTGTGGAGCCCTGGGCTGCTGGCGGTGCAGGTGTTGGCTCATGGCTCCTAGTGTCTGTGT  
 CCTGCTGCTCTCAGCCCATTTCCGGACCTTGACAGATGAGGAGATAACTTTGAGCTGCTCAGAGGCCAGCGC  
 TGAGGAAGCTCTGCTCCCTGCACTCCCAACAGTATCTTTCAGATAAACAGCGAAGACTTCTTGTGGAAGC  
 GCAAGTGAGGGATCAGCCACGCTGGCTCCTGCTGCTGCCATGAGGGCTGAGCCCCGCCCTGGGCTGCAGAT  
 CTGCTGGAGCCTTGGCATCTCAGACTCACTCACCAAGGAGTAACCTCACTGACATCAAACTCAACAGTTC  
 CCAGGAGTTTGTCTCAGCTCTCTCTAGACTGGAGGCTTCTGGAGGAGGCTGGCAGCCAGGAACAAGTGC  
 ACTTCTGTCGAAGTTGTTCCCTCAGATGCTCTGAGTGTGAGCGAGGCCCTGGCTTCCCGGATAGTTGGTGG  
 GCAGTCTGTGGCTCCTGGCGCTGGCGTGGCAGGCCAGCTGGCTGGCTTCCGGCACACGTTGGGGG  
 CTCTGTGCTAGCGCCACGCTGGTGTGACTGCTGCACATTGTATGCACAGTTTCAGGCTGGCCGCTGTCCA  
 GCTGGCGGTTTCATGCGGGCTGGTCAGCCACAGTGCCGTACGGCCCAACCAAGGGCTCTGTTGGAGAGGA  
 TTATCCACACCCCTCTACAGTCCCAGAAATCATGACTACGACGTGCCCTCCTGAGGCTCCAGACCGCTCTC  
 AACTTCTCAGACACTGTGGCGCTGTGTGCTGCCGCGCAAGAACAGCATTTTCGAAGGGCTCGCGGTGCT  
 GGGTGTCTGGCTGGGCCACACCCACCTAGCCATACTTACAGCTCGGATATGCTCCAGGACACGGTGTGCC  
 CTTGTTACGACTCAGCTCTGCAACAGCTCTTGGGTACAGCGGAGCCCTCACCCCGCATGCTTTGCGCTG  
 GCTACCTGGACGGAAGGCTGATGCATGCCAGGAGATAGCGGGGCCCCCTAGTGTGCCCAGATGGGGACA  
 CATGGCGCCTAGTGGGGTGGTCAGCTGGGGCTGGTGGCAGAGCCCAATCACCCAGGTGTCTACGCCA  
 AGGTAGCTGAGTTTCTGGACTGGATCCATGACACTGCTCAGGACTCCCTCCTCTGA

>SGPR527\_1\_SEQID\_52  
 ATGGCCCGCACCTGCTCCTCCCTTGTGATGCTGTGATCATGCTCCCATCCAGGAGCCTTCCAGGACTCAGC  
 TCTCAGTCTTACCAGGAAGAACCTGAAGATCTGAGCTGCGGGCGCCCTGAGCCCTCGGCCCGCATCGTGGGG  
 GGCTCAAACGGCAGCGGGCACCTGGCTTGGCAAGTGAAGCTGCACCATGGAGGTGGCCACATCTGCGGG  
 GGCTCCCTCATCGCCCCCTCTGGTCTCTCCGCTGCTCACTGTTTCATGACGAATGGACGCTGGAGCCCCG  
 CGGCCGAGTGTGGTACTGCTGGCGGTGCACTCCAGGACGGGCCCTTGAGGGCGCGCACACCCGCGCA  
 GTGGCCGCCATCGTGTGGCGCCAACTACAGCCAAAGTGAGCTGGGCGCGCACCTGGCCCTGCTGGCCCTG  
 GCCTACCCGCGCAGCTGGGCCCGCGGTGTGCTGCTGCTGCCCTGCGCCGCGCTCACACCGCTTGTGCAC  
 GGCACCGCCTGCTGGGCCACCGGCTGGGAGACGTCCAGGAGGAGATCCTCTGCCCTCTCCCTGCGTGTGCTA  
 CAGGAAGTGAGCTAAGGCTGCTGGGCGAGGCCACCTGTCAATGTCTACAGCCAGCCCCGGTCCCTTCAACC

FIG. 1TT

TCACTCTCAGATATTGCCAGGGATGCTGTGTGCTGGCTACCCAGAGGGCCGACACCTGCCAGGGTGA  
 CTCTGGGGGGCCCTGCTGTGAGGAAGGCGGCCGCTGGTCCAGGCAGGAATCACAGCTTTGGCTTTGGC  
 TGTGGACGGAGAAACCGCCCTGGAGTTTTCACTGCTGTGCTACCTATGAGGCATGGATACGGAGCAGGTGAT  
 GGGTTCAGAGCCTGGCCTGCCCTTCCACCCAGCCAGAGACCCAGTCAGATCCCCAGGAGCCAGGGAG  
 GAGAACTGCACCATTTGCCCTGCTGAGTGGGGAAGCCCCGCGGCCAGGGCCCTGGCCCTGGGAGGCCCAG  
 GTGATGTCAGGATCCAGACCCCTGCCATGGGGCGCTGGTGTCTGAAGCTGGTCTTGGCACCTGCCAGCT  
 GCTTCTGGACCCGAAACAGCTCCGACAGCCACCCCGACCTCGACGCTGGCGCTGCTGCTGCCCTCGCG  
 CCGCGCGGAGCGGTGGCGCGCTGGTGCAGCACGAGAACGCTTCTGTGGACAAACGCTCGGACCTGG  
 CGCTGCTCAGCTGCGACGCCCGTGAACCTGAGCGCGCTTCCGGCCCGTGTGCCTACCCACCCGGAAC  
 ACTACTTCTGCCCGGAGCCGCTGCCGCTGGCCGCTGGGGCCGCGGGAACCCGCGCTTGGCCCAAGC  
 GCGTCTGGAGCGGAGCTGTTAGCGGCTGTGTGCTGCCACTGCCCTGTACGGCCCGCAGGGCGGCAGTA  
 CCGTCCCGGAGACCCCGCACGCGCTCTGCCCTGCCCTACCAGAAAGGAGGAGGTGGCAGCTGCTGG  
 ACTCATGGCCCATGGATCAGCCATGTGACTCGGGGAGCCTACCTGGAGGACCAGCTAGCCTGGGATTGGGGCC  
 CTGATGGGAGGAGACTGAGACACAGACTTGTCCCCACACACAGAGCATGGTGCCTGTGGCCTGGCGCTGGA  
 GGCTGCTCCAGTGGGGTCTGTGGCCCTGGCTGGCAGAGGTGCATGTGGCTGGTATCGAGTCTGCACCTGG  
 GATCCTCTGGCCCCAGCTGGTCTCTGGCAGCCACTACTGTCTCAGGCCAGGCTCTACAAAGTGCCTT  
 ACATTGAAGTGATCTGGCCGGCAGGGCCAGCTCCCTCCACAGGGCCACAGGTATCCGCTTGGTCA  
 CAGCATCCGGTGCCTCCAGCACCCTGGGACTCAGGCCCCCCCTGGCCCTCCTGGAGCTGAGCTCCCGGTGGA  
 GCCCTCCCATCAGCCCTGCCATCTGTCTCACCCGGGGTATCCCCCGGGGCCAGCTGCTGGGTGTTG  
 GGCTGGAAGAACCCAGGACCGAGTCCCTGTGGCTGCTGTCTCCATCTTGACACAAACGAACTCTGTGACTG  
 CCTCTATCAGGGCATCCTGCCCCCTGGAACCTCTGTGTCTGTATGCAGAGGGGCAGGAGAACAGGTGTGAG  
 ATGACCTCAGCACCGCCCTCCTGTGCCAGATGACGGAAGGTCTCTGATCCTCGTGGCATGGCTGTTCAAG  
 GGAGCCGGGAGCTGTTGCTGCCATTGGTCTGAAGAGGCCCTGGATCTCCAGACAGTGGGAGAGGCCAACTT  
 CCTGCCCCCCAGTGGCTCCCCACACTGGCCCCACTGGAGGCAGCAATCTCTGCCCCCAGAACTGGCCAAAGGCC  
 TCGGGATCCCCGCATGCAGTCTACTTCTCTGCTGCTGCTGCTGCTGATCTCCTGATCCAGAGCTGA

>SGPR542\_SEQID\_53

GCCATGGGCTCGGGTTGAGGGGCTGGGACGTCTCTGCTGACTGTGGCCACCGCCCTGATGCTGCCCGTG  
 AAGCCCCCGCAGGCTCCTGGGGGGCCAGATCATCGGGGGCCACGAGGTGACCCCCCACTCCAGGCCCTAC  
 ATGGCATCCGTGCGCTTCGGGGGCCAACATCACTGCGGAGGCTTCTGCTCGAGCCCCGCTGGTGTCTCGG  
 CCGCCCCACTGCTTCAGCCACAGAGACCTCCGCACTGGCCTGTGTGCTGGCGCCCCACGTCCTGAGTACTGC  
 GGAGCCCCCAGCAGGTGTTGGCATCGATGCTCTCACCACACACCCCCGACTACCACCCCCATGACCCACGCC

AACGACATCTGCCTGCTGCAGCTGAACGGCTCTGCTGCTCCTGGCCCTGCAGTGGGCTGCTGAGGCTGCCAG  
GGAGAAAGGCCAGCCCCCACCACAGCGGGACACGGTGCCGGGTGGCTGGCTGGGCTTCGTGCTGACTTTG  
AGGAGCTGCCGCTGACTGATGAGGGCCAAAGTCCGAGTGTGACCCGGACGTCTGCAACAGCTCCTGGAA  
GGCCACCTGACACTTACCATGCTCTGCACCCGAGTGGGACAGCCACAGACGGGCTTCTGCTGGCCGAC  
TCCGAGGGCCCTGGTGTGACGAAACCGGCTCACGGCTCGTTTCTTCTCGGGCTCTGCTGCGGCGAC  
CCCAAGACCCCGACGTGTACACGAGGTGCCCTTTGTGGCTGGATCTGGACGTGGTTCTGGCGGAGCA  
GTCCCCAGCCCCCTGCCTGGGACCACAGGCCCCCAGGAGAACGCCCTGA

>SGPR551\_SEQID\_54

ATGCCCGTGGCCGAGGCCCCCAGGTGGCTGGCGGGCAGGGGACGGAGGTGATGGCGAGGAAGCGGAGCC  
AGAGGGGATGTTCAAGGCTGTGAGGACTCCAAGAGAAAGCCCGGGCTACCTCCGCCCTGGTGCCCTGTTT  
GTGCTGCTGGCCCTGCTCGTGGCTTCGGCGGGGTGCTACTCTGGTATTTCTTAGGTACAAAGCGGAGG  
TGATGGTCAGCCAGGTACTCAGGCAGTCTCGTGTACTCAATCGCCACTTCTCCAGGATCTTACCCGCCG  
GAATCTAGTGCCCTCCGCAGTGAACCCGCCAAAGCCAGAGATGCTCAAGGAGCTCATCCAGCACCCGCCCT  
GGAACTTACTACAACTCCAGTCCGTCTATTCCTTTGGGAGGACCCCTCACCTGCTTCTTGTTCAATTCT  
CCAAATCCCCGAGCACCGCGGTGATGCTGAGCCCCGAGGTGTGACGCACTGCTGTGGAGGAGCTGCT  
GTCCACAGTCAACAGCTCGGCTGCCCTCCCTACAGGCCGAGTACGAAGTGGACCCGAGGCCCTAGTGATC  
CTGGAAGCCAGTGTGAAGACATAGCTGCATTGAATCCACGCTGGTGTACCGCTACAGTACGTGGGCCA  
GGGCCAGGTCTCCGGCTGAAGGGCCCTGACCACCTGGCCTCCAGTGCCTGTGGCACCTGCAGGGCCCCAA  
GGACCTCATGCTCAAACTCCGGCTGGAGTGGACGCTGGCAGAGTCCCGGACCGACTGGCCATGTATGACGTG  
GCCGGCCCTGGAGAAAGGCTCATCACCTCGGTGTACGGCTGCAGCCGCCAGGAGCCCGTGGTGGAGGT  
CTGGCGTCGGGGCCATCATGGCGTCTGCTGGAAGAGGGCCTGCACAGCTACTACGACCCCTTCGTGCTCT  
CCGTGCAGCCGGTGTCTCCAGGCCGTGAAGTGAACCTGACGCTGGACACAGGCTCGACTCCCAGGGCGT  
CCTCAGCACCCCGTACTTCCCGAGCTACTCGCCCCAAACCCACTGCTCCTGGCACCTCACGGTGCCCTCTC  
TGGACTACGGCTTGGCCCTCTGGTTGATGCCCTATGCACCTGAGGAGGCAGAGTATGATTTGCCGTGCACCCAG  
GGCCAGTGGACGATCCAGAACAGGAGGCTGTGTGGCTTGGCATCTGCAGCCCTACGCCGAGAGGATCCCCG  
TGGTGGCCACGGCCGGATCACCATCAACTTCACTCCAGATCTCCCTCACCGGCCCGGTGTGCGGGTGCA  
CTATGGCTTGTAACAACCAAGTCGGACCCCTGCCCTGGAGAGTTCTCTGTGTAATGGAATGACTCTGTGCCCTG  
CCTGTGATGGGTCAAGGACTGCCCCAACGGCCTGGATGAGAGAACTGCGTTTGCAGAGCCACATTCCAGTG  
CAAAGAGGACAGCACATGCATCTCACTGCCCAAGTCTGTGATGGCAGCCTGATTGTCTCAACGGCAGCGATG  
AAGAGCAGTGCCAGGAAGGGTGCCATGTGGGACATTACCTTCCAGTGTGAGGACCCGGAGCTGCGTGAAGAA  
GCCCAACCCGCAGTGTATGGCGGGCCCGACTGCAGGGACGGCTCGGATGAGGAGCACTGTGACTGTGGCCT

CCAGGGCCCTCCAGCCGATTGTTGGTGGAGCTGTCTCCGAGGGTGAGTGGCCATGGCAGGCCAGCCTC  
CAGTTCCGGGTCACACATCTGTGGGGGCCCCCTCATCGCTGACCCGTGGTGATACAGCTGCCACTGCT  
TCCAGGAGACAGCATGGCCCTCCACGGTGTGGACCGTGTCTGCGCAAGGTGTGCAGAACTCGCGCTG  
GCCTGGAGAGGTCTCTCAAGGTGAGCCGCTGCTCTGCACCCGTACCAAGAGGACAGCCATGACTAC  
GACGTGGCGCTGCTGACGCTGACACCCGGTGGTGGCTCGCGCCGCTGCGCCCGCTGCTGCCCGCGG  
CGCTCCCACTTCTTCGAGCCCGCTGCACTGCTGGATTACGGCTGGGGCGCTTGGCGAGGGCGGCC  
ATCAGCAACGCTCTGCAGAAAGTGATGTGAGTTGATCCACAGGACCTGTGCAGCGAGGCTATCGCTACCA  
GGTGACGCCACGCATGCTGTGCGCGCTACCGCAAGGCAAGGATGCCGTGTCAGGGTGAATCAGGTGGT  
CCGCTGGTGTGCAAGGCACTCAGTGGCCGCTGTTCTGCGGGGCTGTCAGCTGGGGCTGGGCTGTGGC  
CGCCCTAACTACTTCGGCGTCTACACCCGCATCACAGGTGTGATCAGCTGGATCCAGCAAGTGGTGACCTGA

>SGPR451\_SEQID\_55

GACCTGCCGCCATCTTGCTCACCAGCCTCCAAATGCGGCTGGGGCTCCTGAGCGTGGCGCTGTTTGTGG  
GGAGCTCTCACTTATACTCAGACCCTACTCGCCCTCTGGAAGGCACAGGCTCGGCCCTCGCCGGAACCGGC  
GGTAGTTCACAGCGCTGAGCCGCTCCGCAAGAGGCTCCGCGCGGAGGAGGAGGCGCATGCAA  
AGGATTGTGGAACAGCACCGCTTAAGGATGTGTTGCAAGGCTCGGATTATAGGGGACCCGAGCAAGCT  
GGCGCATGGCCGTGGTGTGAGCCTGCAGATTAATATGGCGTGTCTTGTTCATGTATGTGGGGAACCT  
AGTGAGAGAGGTGGTCTCAGAGCTGCCACTGCACCTAAGACACTAGCGATCCTTAAATGTGGACAGCTG  
TGATTGGAACATAATATACATGGACGCTATCCTACCAAGAGATAAAATTAAGCAATCATTTATCATCCA  
AACTTCATTTTGGAACTTATGTAATGATATTGCACCTTTTCACTTAAAAAAGCAGTGAGGTAAATGACTATAT  
CAGCCTATTTGCCCTACCTTTTGATGTTTTCCAATCCTGGACGGAACACAAAGTGTATTAAGTGGCTGGGAA  
GAACAAAGAAAGTAACGCTACAAATATTTACAAGATGCAGAAAGTGCATTATATTTCTCGAGAGATGTGTA  
TTCTGAGAGGAGTTATGGGGAATAATTCCTAACACTTCATTTTGTGCAGGTGATGAAGATGGAGCTTTTGATACT  
TGCAGGGTGACAGTGGGGACCATTAATGTGCTACTTACCAGAAATAAAGATTTTTGTAAATGGAAATTACC  
AGTTACGGACATGGCTGTGGTCGAAGAGGTTTTCTGCTGTCTATATTGGGCCATCCTTCTACCAAAGTGGCTG  
ACAGAGCATTTCTCCATGCAAGCACTCAAGGCATACCTACTATAAATATTTACGTGGCCAGATCCTCATAGCTT  
TATGTTTTGTACCTTACTAGCAACAACATAA

>SGPR452\_1\_SEQID\_56

AGCCCCCGCAGCCCGAGGACCCCTGACTGTAGGCTCCAGGCCCTCCCTGGAAGCCCTGGCCACGCTCGCCCCG  
CAGCCCTCAGACTGGCTGTGCTTCGCGGATCTTGCGTGGTTCGAGGCTGATGGAGCTGCCCACTCCATGGGCC  
TGGGCAGCAGCTTGAAGTGGCGTGGGCCAAGCCCTCTGGGATGCCCGTCCCGAGAGAAATGACCTGGTGGGCAT

TTGTGGGGGCCACAATGCCCCCGGGGAAGTGGCCGTGGCAGGTACGCCCTGAGGGTCTACAGCTACCACTG  
GGCCTCCTGGGCGCACATCTGTGGGGCTCCCTCATCCACCCCCAGTGGTGCTGACTGCTGCCCACTGCATT  
TTCTGGAAGACACCGACCCGTCATCTACCGGATCCACGCTGGGACGTATCTCTACGGGGCCGGGGC  
TGCTGAACGTCAGCCGATCATCTCCACCCCACTATGTCACTCGGGGCTGGTGCGGATGTGCCCTGCT  
CCAGCTGCCGGGTACCTCTCTCCCAGAGTCGCTGCCGCCCTACGCCCTGACGACGCGAGTGTGCA  
GGTCTGGAACGCCGTCTGTGAGCAGCCCTACCGCAACGCCCTCAGGGCACACTGGCGACCGCAGCTCATC  
CTGGATGACATGCTGTGTGCCGGCAGCGAGGCCGAGACTCTGCTACGTTGACTCCGGCGGCCCTCTGGTCT  
GCAGGCTCGGGGGTCTGTGGCGCTGTGTGGGGTGGTCAGCTGGGGTACGGCTGTACCCCTGCGGGACTTC  
CCGGCGTCTACACCCACGTCAGATCTACGTGCTCTGGATCCTGCAGCAAGTCGGGGAGTTGCCCTGA

>SGPR504 SEQID 57

ATCGGGGCCACGAGGTACCCCTCAGCCCTACATGGCATCCGTGCGCTTCGGGGCCACATCACT  
GCGGAGGCTTCCTGCTCGGAGCCCGCTGGTGCTCGGCCGCCAGTGCTTCAGCCACAGG

>SGPR469 SEQID 58

GGAGATTCTGGGGGGCCCTGGTCTGTGAATTAATGGCACATGGTCCAGTGGGATTGTGAGCTGGGCA  
TTGGCTGCGGTCGAAAGGATACCCCTGGAGTTACACAGAAGTTAGTTCTACAAGAAATGGATT

&gt;SGPR400 SEQID 59

ATGGCAGGAGAACAGGTACCGCCAAATGTCAGCAGATACCTGGACAGAAAACGATGTCCTTTCTGAAAAAAC  
ATTTCTCTTTCTTATAGAGCATCACTCCTTGCTGTTGTAACACACAGATCCAATAATAGTCGTGGCGAGCTTT  
GAGAGTCAGGTTCTCCCGATTGACAGCAGGGACCGCGAGACCCCAAATTCCTCCCTGGGTCTCGAG  
CTGCACCTTCTGAAGTCTGCTCCCTTCAGGATCTGGCAGGGGTGAAGACCAAGGAGAGGGGGACAGAGA  
CACGGGCACCTGCTGECTATGCATTCACGCTGCTCCTTCTGCTGGGATTTCCGGTGAGCCCCCAGAAATGGGTCT  
GTGGCGGGCCACAGTCTCATCTGGTATTGCCTCAGGCTTGGGGGCTAGTGTGGGCAGTGCCCCCTGGCAGGT  
CAGCATCCGCCAGGGCTTGATTCACGCTGCTCAGATACCCCTCATCTCAGAGGAGTGGTGCTGACAGTGGCGA  
TCTGCTTCCCAATTATCCCCCACCCCTGATTTCCAAGCAACACATCTAGTGCCATCGCTGTGTTAGAACTGCCCT  
CCCCAGTTTCTGTTAGCCCTGTTGCTGCTCATCTGCCCTCCCTCATCTGAAGTCTACCTGAAGAAGAAATACAAC  
CTCCTGCTGGTGACTGGATGGGCTATACTGGAATATTCCAATATATCAAGCGTTCTTATACACTGAAGGAGCT  
GAAAGTGCCCTCATTTGATCTCCAGACATCGGCTGACCACCTATCAAAATGAAATCTTGCTGCACGGAGTTGAGCT  
CATCATCAGTGAAGCTATGATCTGCTCCAAGCTCCAGTGGGCAGATGGATCAGTGTAAGTGTACTGTAAGAAATCCACC  
CCTCAGGCACCTTTACAGGCCCTTGCCCTTCCCCAGTGA

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FIG. 2A

>SGPr397\_SEQID\_60  
 MKCLGKRRGQAAFLPLCWLFLKILQPGHSHLYNNRYAGDKVIRFIPKTEEEAYALKISYQLKVDLWQPSSISYVSEG  
 TVTDVHIPQNGSRALLAFLQEAANIYKVLIEDLQKLEKSSSLHTQRNRRSLSGYNYEVYHSLEEIQNWMMHHLNKTHTS  
 GLIHMFSIGRSYEGRCFLIKLGRSRRLKRAVWIDCGIHAREWIGPAFCQWVFVKEALLTYKSDPAMRKMLNHL YFYIMP  
 VFNV DGYHFSWTNDRFWRKTRSRNSRFRRCRGVDANRNWKVKWCGKFGTNWDPPDKVSAGFTLQNMSPEDSHGR  
 LMFFCM

>SGPr413\_SEQID\_61  
 MKPLLETLYLLGMLVPGGLYDRSLAQHRQEIVDKSVSPWSLETYSYNIYHPMGEIYEWREISEKYKEWVTQHFLGV  
 TYETHPMYYLKISQPSGNPKKIWMDCGIHAREWIAPFCQWVFVKEILQNHKDNSSIRKLLRNLDYVLPVLNIDGYIYT  
 WTTDRLWRKSRSPHNGTCFGTDLNRNFNASWCISGASRNCQDQTCGTGPVSEPETKAVASFIESKKDDILCFLTM  
 HSYGQLILTPYGYTKNKSSNHPEMIQVGQKAANALKAKYGTNYRVGSSADILYASSGSSRDWARDIGIPFSYTFELRD  
 SGTYGFVLPEAQIQPTCEETMEAVLSVLDVYAKHWHSDSAGRVTSATMLLGLLVSCMSLL

>SGPr404\_SEQID\_62  
 MVSNDSTWTVTKNGSGDMIFEGNSEKEIPVLNLPVMVARYIRINPQSWFDNGSICMRMEILGCPLDPNNYYHR  
 RNEMTTTDDLDLDFKHNYKEMRQLMKVNMCPNITRIYNIQKSHQGLKYAVEISDHPGEHEVGEPEFHYIAGAHGNE  
 VLGRELLLLLVQFVCQEYLARNARIVHLVEETRIHVLPSLNPDPGYEKAYEGGSELGGWSLGRWTHDGDIDINNFPDLNT  
 LLWEAEDRQNVPRKVPNHYIAPEWFLSENATVAAETRAVIAWMEKIPFVLGGLVGGELVAYPYDLVRSPWKQEH  
 TPTPDDHVFRWLAYSASTHRLMTDARRRVCHTEDFQKEEGTVNGASWHTVAGSLNDFSYLHTNCFELSIYVGCDK  
 YPHESQLPEEWENNRESLIVFMEQVHRGIKGLVRD SHGKGIPNAISVEGINHDIRTANDGDYWRLLNPGEYVVTAKAE  
 GFTASTKNCMVGYDMGATRCDFTLSKTNMARIREIMEKFGKQPVSLPARRLKLRGRKRQRG

>SGPr536\_1\_SEQID\_63  
 MWRCPLGLLILLPLAGHLALGAQQGRGRRELAPGLHLRGIRDAGGRYCCQEQLCCRGRADDCALPYLGAICYCDLF  
 CNRTVSDCCPDFWDFCLGVPPFPPIQGMHGGRIPVLGTYWDNCNRTCQENRQWQCQDEPCLVDPDMIKAIN  
 QGNYGWQAGNHSFAWGMTLDEGIRYRLGTIRPSSVMNMHEIYTVLNPGEVLPATAFEASEKWPNLHIEPLDQGNCA  
 GSWAFSTAAVASDRVSIHSLGHMTPLVSPQNLLSCDTHQQQCGRCGRGLDGAWWFLRRRGVSDHCYPFSGRERDE  
 AGPAPPCMMHSRAMGRGRQATAHCPNSYVNNNDIYQVTPVYRLGSNDKEIMKELMENGVPQALMEVHEDFFLYK  
 GGIYSHTPVSLGRPERYRRHGTHSVKITGWGEETLPDGRTLKYWTAANSWGPWAWGERGHFRIVRGVNECDIESFVL  
 GVWGRVGMEDMGHH

>SGPr414\_SEQID\_64

MCENCADLVEVLNEISDVEGGDLQLRKEHTLKIFTYINSWTQRQCLCCFKEYKHLIFNQVVCALINLVIAQVQVLRD  
QLCKHCTTINIDSTWQDESNOAEEPLNIDRECNEGSTERQKSIEKKSNNSTRICNLTEEESSKSSDPFSLWSTDEKEKLL  
LCVAKIFIQIFPLYTAYKHNTHPTIEDISTQESNILGAFCDMNDVEVPLHLLRVCLFCGKNGLSLMKDCFEYGTPEPLP  
FLIAHAFITVSNIRIWLHIPAVMQHIIPRTYVIRYLCKLSDQELRQSAARNMADLMWSTVKEPLDTTLCFDKESLDLAF  
KYFMSPTLTMRAGLSQITNQLHTFNDVCNNESLVSDTETSIKELADWLISNNVVEHIFGNLHIEIKQCQVILNFLAAE  
GRLSTQHIDCIWAAAQKHCRIYHDLFPLSLIKNLDPVPLRHLLNLVSALEPSVHTEQTLYLASMLIKALWNNALAAKAQ  
LSKQSSFASLLNTNPIGNKKEEELRRTAPSPWSPAASQSSDNSTHQSGGSDIEMDEQLNRTKHVQQRSLDTEE  
SMQSSDETANSGEDGSSGPGSSSGHSDGSSNEVNSSHASQSPGSEVQSEDIADIEALKEEDEDHGHNNPP  
KSSCGTDLNRKLESQAGICLGDQGTSENGTSSGTGKDLVFNTESLPSVDNRMRLDACSHSEDPEDHISGEMN  
ATHIAQGSQESCITRTGDFLGETIGNELFNCROFIGPQHHHHHHHHGHMVDMLSADDVSCSSSQVSAKSEK  
NMADFGEESGCEELVQINSHAELTSHLQQHLPLNASIYHEHLSQGPVWHKHQFNSSNAVTDINLDNVCKKGNLTLW  
DIVQDEDAVNLSEGLINEAEKLLCSLVCWFTDRQIRMRFIEGCLENLGNRSVVISLRLPKLFGTFQFGSSYDTHWIT  
MWAEKELNMMKLFFDNLVYIQTVREGROKHALYSHSAEVQVRLQFLTCVFSTLGSPPDHFRLSLEQVDILWHCLVED  
SECYDDALHWFLNQVRSKQDHAMGMETKYHLEKMPQLKPETISMTGLNLFQHLNCLARLATSAYDGCNSSELCG  
MDQFWGIALRAQSGDVSRRAIQYINSYINGKTGLEKEQEFISKMESLMIASSLEQESHSSLMVIERGLMLKTHLE  
AFRRRFAYHLRQWQIEGTGISSHLKALSDKQSLPLRVVCPAGLPDKMTIEMYPSPDQVADLRAEVTHWYENLQKEQI  
NQQAQLQEFQSNRKGEFFGGLMGPVRMISSGHELTDYDEKALHELGFKDMQMFVSLGAPRRERKGEVQLPA  
SCLPPPQKDNIPMLLLQEPHLTTLFDLLEMLASFPPSGKVAVDSESLRCEELHLHAENLSRRVWELLMLLPTCPN  
MLMAFNQISDEQSFKAQSDHRSRHEVSHYSMWLLVSWAHCCSLVKSSLADSDHLQDWLKLTLIPETAVRHESCSG  
LYKLSLGLDGGDSINRSFLLAASTLLKFLPDAQALKPIRIDDYEEEPILKPGCKEYFWLLCKLVNIIHKDASQTLLDL  
DALARHLADCIRSREILDHQDGNVEDDGLTGLRLATSVVHKPPKFSREGQEFRLDIFNLLFLPSLKDRQPKCKS  
HSSRAAAYDLLVEMVKGSVENYRLIHNWVMAQHMQSHPYKWDYWPHEDEVRAECRFVGLTNLGATCYLASTIQQLY  
MIPERARQAVFTAKYSEDMKHKTTLLLEQKMFYTLMESECKAYNPRPFCKTMDKQPLNTGEQKDMTEFFTDLTIE  
EMSPELKNTVKSFLGGVITNNVSLDCEHVSQTAEFFYTVRCQVADMKNYESLDEVTKDTEGDNMYTCSQCGKKV  
RAEKRACFKCLPRIXSFNTMRYTFNMVTMMKEKVNTHFSFPLRLDMTPYTEDFLMGKSERKEGFEVSDHSHKDSSEY  
EYDLIGTVHTGTADGGHYYSFIRDIVNPHAYKNNKWYLFNDAEVKPFDSAQLASECFGGEMTTKTYDSVTDKFMDFS  
FEKTHSAYMLFYKRMEPEEEENGREYKFDVSSSELLEWHDNMQFLQDKNIFEHTYFGFMWQLCSCIPSLDPDPKAVS  
LMTAKLSTSFVLETFIHSKEKPTMLQWIELLTKQFNNSQAACEWFLDRMADDDWWPMQILKCPNQIVRQMFQRLCIH  
VIQRLRPVHAHLYLQPGMEDGSDMDTSDVEDIGGRSCVTRFVRTLLIMEHGVKPHSKHLTEYFAFLYEFAKMGEES  
QFLLSLQAISTMVHFYMGTKPENPQVEVLSEEEGEEEEEDILSLAEEKYRPAALEKMIALVALLVEQSRSERHLTL  
SQTDMAALTGGKGFPFLFQHIRDGINIRQTCNLFSLCRYNNRLAEHIVSMLFTSIKLTPEAANPFFKLLTMLMEFAGG

FIG. 2B

PPGMPFASYILQRIWEIEYNPSQCLDWLAVQTPRNKLAHSWVLQNMENWVERFLAHNYPRVRTSAAYLLVSLIPS  
 NSFRQMFRSTRSLHIPTRDLPLSPDTTVLHQVYNVLLGLLSRAKLYVDAAVHGTTLVPYFSFMTYCLISKTEKLMFS  
 TYFMDLWNLFPQKLSEPAIATNHNKQALLSFYWNVCADCPENIRLVQNPVVTKNIAFNILADHDDQDWLFNRGBMLP  
 AYYGILRLCCEQSPAFTRQLASHQNIQWAFKNLTPHASQYPGAVEELFNLMLQFIAQRPDMREEELEDIKQFKKTTISC  
 YLRCLDGRSCWTTLSAFRILLESDEDRLLVFNRLGILMTESFNTHMMYHEATACHVTGDLVELLSIFLSVLKSTRPY  
 LQRKDVKAQALIQWQERIEFAHKLLTLNLSYPPPELRNACIDVLKELVLLSPHDFLHTLVPFLQHNHCTYHHSNIPMSLGP  
 YFPCRENIKLIGGKSNIRPPPELNMCLPTMVETSKGDDVYDRMLLDYFFSYHQFIHLLCRVAINCEKFTETLVKLSV  
 LVAYEGLPLHALFPKLWTELCQTQSAMSKNCIKLCCEDPVFAEYIKCILMDERTFLNNIVYTFMTHFLLKVQSQVFSE  
 ANCANLISTITNLISQYNLQSDFSNRVEISKASASLNGDLRALALLSVHTPKQLNPALIPTLQELLSKCRCTCLQQRNS  
 LQEQAERKTKDDEGATPIKRRRVSSDEEHTVDCISDMKTETREVLTPSTSDNETRDSSIIDPGTEQDLSPENSS  
 VKEYRMEVPSSFSEDMNIRSQAEEQNNGRYDDCKEFKDLHCSKSDSLAEESEFPSTSISAVLSDLADLRSCDG  
 QALPSQDPEVALSLSCGHSRGLFSHMQQHDILDTLCRTIESTIHVWTRISGKGNQAAS

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MSPLKIHGPIRIRSMQTGITKWKEGSFEIVEKENKVSLLVHYNTGGIPRIFQLSHNIKNVLRPSGAKQSRLMLTLQDNS  
 FLSIDKVPKDAEEMRLFLDAVHQNRLPAAMKPSQGSFGAILGSRTSQKETSRLQSYSDNQASAKRGSLKTDIP  
 FRKVLGNPGRGIKTIVAGSGIARTIPSLTSTPLRSGLENRTEKRMISTGSELNEDYPKENDSSNNKAMTDPSR  
 KYLTSSREKQLSLKQSEENRTSGLLPLQSSFFYGSRAGSKEHSSGGTNLDRTNVSSQTPSAKRSLGFLPQPVPLSV  
 KKLRCNQDYTGWNKPRVPLSSHQQLQGFSNLGNTCYMNAIQLSFSQSFANDLLKQGIPIWKKIPLNLRFAHL  
 LVKDKICNSETKDLLKVKNAISATAERFSGYMQNDAHEFLSQCLDQLKEDMEKLNKTWKTEPVSGEENSPDISATR  
 AYTCPVITNLEFEVQHSICKACGEIIPKREQFNDLSIDLPRRKPLPPRSIQDSLDFRAEELEYSCCKCGGKCALVRH  
 KFNRLPRVLILHLKRYSFNVALSNNKIGQQVIIPRYLTLSHCTENTKPPFTLGWSAHMAMSRPLKASQMVNSCITSPS  
 TPSKKFTFKSKSSALCLDSDSEDELKRSVALSQRCEMLGNEQQQEDLEKDSKLCPIEPDKSELENSGFDMSSEEL  
 LAAVLEISKRDASPSLSHEDDDKPTSSPDTGFAEDDIQEMPENPDTMETEKPKTITELDPASFTEITKDCDENKENTP  
 EGSQGEVDWLQQYDMEREREELQALQSLQEQEAWQEKEDDLKRATELSLQEFNNSFVDALGSDDESGNE  
 DVFDMEYTEAEAEELKRNAETGNLPHSYRLISVSHIGSTSSSGHYISDVYDIKKQAWFTYNDLEVSKIQAAVQSDRD  
 RSGYIFFYMHKEIFDELLETEKNSQSLSTEVGKTRQAS

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MTLLAPWYTGPMIPMDVNEPSSVTTAPTSSSLQHSSFLATGKLSLHFGHPRECEVTRIDDKNRRGLEDSEPGAKL  
 FNNDGVCCCLQKRGPNITSCVSPRTLQISVFLSEKYGIVKFESDELPGVIGSNIGDAHFQEFAGISWKPVVDP  
 DDPIQFPDCCSSSSRIPSVSVLVAVPLVAGHKGAFIERMLGCFKELKQELTQEGPGGGHPRSAWPPRRHAQWP

PEPCEQGEPPVVEAEVEEAETAEKAERKVEAEAKVEGKAEAAAGKVAAGKDATEKVEKTAGKVDAAGKVETAEG  
 PGRRAEKLEPEPEPVREAEQPKQLEDENPARSGGGNSDEVPPTLPSDPPRPDPSPRRSRAPRRPRPQ  
 TRLRTPQPRPRPRPGGGCLDVDFAVGPPGCSHVNSFKVGENWRQELRVYQCFCVWCGTPETRKSKA  
 KSCICHVCGTHLNRHLSCLSCVFFGCFTEKHIHEAETQHNLAVDLYGGIYCFMCKDYVDKIDIEQIAKEEQGEALK  
 LQASTSTEVSHQQCSVPGLGEKFTWETTKPELELLGHNPRRRRITSSFTIGRLNLTGNTCFMNCIVQALHTPILRD  
 FFLSDRHRCEMPSELCLVCEMSSLFRELYSNPSPHVPYKLLHLVWIHARHLAGYRQQDAHEFLAALDVLHRHCKG  
 DDVGKAANNPNHCNCIDQIFTGGLQSDVTCQACHGVSTTIDPCWDISLDLPGSCTSFWPMSPGRESSVNGESHIPGI  
 TTLTDCLRFRTRPEHLGSSAKIKCGSCQSYQESTKQLTMNKLPPVACFHFKRFEHSAKQRRKITYISFPLELDMTPFM  
 ASSKESRMNGQLQLPTNSGNENKYSLFAVWNHQGTLESGHYTSFIRHHKQDWFKCDDAVITKASIKDVLDSSEG YLLF  
 YHKQVLEHESEKVKEMNTQAY

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 TSDIWLCLKCGFGCGKNSESHLKHFKSSRTEPHCIINLSTWIWCYECDEKLSHCHNKKVLQINVDLQKHASKT  
 QTSAFSRIMKLCCEKCETDEIQKGKCRNL SVRGITNLGNTCFFNAVQNLAQTYTL TDLMEIKESSTKLKIFPSSDS  
 QLDPLVWELSRPGPLTSALFLHSMKETEKGPLSPKVLFNQLCQKAPRFKDFQQDSQELLHYLLDAVRTEETKRIQ  
 ASILKAFNNPTTKTADDETRKKVKISTVKDPFIDISLPIEERVS KPLLWGRMNKYRSLRETDHRYSGNVTIENIHQPRA  
 AKHSSSKDKSQLIHDRKCIRKLSSGETVYQKNENLEMNGDSL MFASLMNSESRLNESPTDDSEKEASHSES NVDA  
 DSEPSESESASKQTGLFRSSSGGVQPDGPLYPLSAGKLLYTKETSDGDKEMAEASELRLSSTVTGDDQDFDRENQP  
 LNISNLCFLEGKHLRSYSPQNAFQTLQSQYITTSKECSIQSCLYQFTSMELLMGNKLLCENCTKNKQKYQEETSFAE  
 KKVEGVYTNARKQLLISAVPAVLILHLKRFHQAGLSLRKVNRRHVDPLMLDLAPFCSATCKNASVGDKVL YGLYGIVEH  
 SGSMREGHYTAYVKVRTPSRKLSEHNTKKKNVPGLKAADSE SAGQWVHVSDTYLQVWPESRALSQAQAYLLFYERV L

>SGPr407\_SEQID\_68

MEYPVPYFRSPNRTLIPERIWSNPLLVLVIAYKTVSWPRQQLLAKQANKWMPFVPSKTL PWDPLELKICYQQNRPYPS  
 PDPSNFTFLRCLNAFSAAVFYL PQPSWHKPEGLKPAGYPRVPDIPYSGGYTLKSTTEAAGLHQSLPMVQLPLHPTKG  
 SALLKESELNDADWANLMMWKRYLEE QEDSKMVDLFVGMKSYLKCQACGYHSMTFKVFCDLSLTIPKKGFAAGK  
 VSLRDCLSLFTKEEELELENASGTL PVTKSEVLSTSCVPFGTTQAASTVATTQPCASARLVGTFTMTLV SPLNLTLDTE  
 GIELTMKALVLDILFKASTDILFNHDS SSGNKWRKLP EPGGLEKKHEELRLRPLKEEYHWLV LVPKL TGSPhRWRP  
 RKRALASCSWCLQRVTMRVMGVQDKAGNRNQMLLLGQRPVIGDTVSN SQTTTRDKACRRPPSHSVFTQSSFWACL  
 DPLDFFYGHQSYWMKAHLNDLILREGPVTQMAQSFYWGFPAGGNLSALEMLPDGPAPRTFLQKKSCFLPLFSYILLH  
 KAGKLFQPDAGHFLVKKVHAPTRGIVFIMEPRQLGGKGLSKLQPACALGGMNSGMEPQKSAPFAAGKGLAPLPVC

NLRFKLRVYKFEELWSRAGLGKSDNHSSRQMPWGAAGVACQHPCKLPRIVAEITPPKLSFGFLNTVQSSVLPTSL  
SQFFLNDSPQEEAIPQSLPGSPRTNSFPKDKFVPKDKLVLSLLTMYELDRLF

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MLAMDTCKHVGLQLAQDHSSLPQKWHCVDCNTTESIWACLSCSHVACGRYIEEHALKHFQESSHPVALEVNEMY  
VFCYLCDDYVLNDNATGDLKLLRRTLSAQSQNYHCTTRSGRFLRSMGTGDDSYFLHDGAQSLLQSEDQLYTALWHR  
RRLMGKIFRTWFEQSPIGRKQEEPFQEKIVKREVKKRRQEELEYQVKAELSMPPRKSLRLQGLAQSTIIIEIVSVQVP  
AQTPASPAKDKVLSTSENEISQVSDSSVKRRPIVTPGVTGLRNLGNTCYMNSVLQVLSHLIFRQCFLKLDLNQWLA  
MTASEKTRSCKHPPVTDTVVYQMNECQEKDTGFCRSRQSSLSGLSGASKGRKMELIQPKETSQYISLCHLHTL  
FQVMWSGKWALVSPFAMLSVWRIPAFRGYAQQDAQEFLCELLDKIQRELETTGTSLPALIPTSQRKLIKQVLNVVN  
NIFHGQLLSQVTCACDNKSNTEPFWDLSLEFFERYQCCKDIASQPCLVTEMLAKFTETEALGKIYVCDQCNSKRR  
RFSSKPVLTEAQQLMICHLPQVLRHLKFRFRWSGRNNREKIGVHVGFEELNMEPYCCRETLSLRPECFIYDLSAV  
VMHHGKGFSGGHTAYCYNSEGGFWWHCNDSKLSMCTMDEVCKAQAYILFYTQRVTENGHSLPPELLLGSQHFN  
EDADTSSNEILS

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MRVKDPTKALPEKAKRSKRPTVPHDESSDDIAVGLTCQHVSIAISNVHVKRAIENLWSVCSECELEERRFYDGGQLVL  
TSDIWLCLKCGFQGGKNSQSHLKHFKSSRTEPHCIINLSTWIIWCYECDEKLSHCNKKVLAQIVDFLQKHASKT  
QTSAFSRIMKLCCEKCEKDEIQKGGKCRNLVSRGITNLGNTCFFNAVMOQLAQTYTLTDLMEIKESSTKLKIFPSSDS  
QLDPLVWELSRPGPLTSALFLFLHSMKETEKGPLSPKVLFNQLCQKRVHLHLI

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MTVRNIAICNMGTNASALEKDIGPEQFPINEHYFGLVNFNGTCYCNVQLQALYFCRPFRENVLAYKAQKKKENLLTC  
LADLFHSIATQKKKVGVIPPKFISRLRKENDLFDNYMQQDAHEFLNYLLNTIADILQEEKKQEKQNGKLNKGNMNEPA  
ENNKPELTWVHEIFQGTLTNETRCLNCETVSSKDEDFDLSDVDEQNTSITHCLRDFSNTETLCSEQKYCYCETCCSKQ  
EAQKRMRVKCLPMVLALHLKRFKMEQLRRYTKLSYRVWFPLELRLFNNTSSDAVNLDRLMYDLVAVVWHCGSGPNRGH  
YITIVKSHGFLLFDDDIVKIDAKAIEEFYGLTSDISKNSSEGYILFYQSRE

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MVPGREENQLVPKEAPLDHTSDKSLLDANFEPGKKNFLHLTDKDGEPQILLEDSSAGEDSVHDFIGPLPREGSGVST  
SDYVSQSYSSILNKSETGYVGLVNQAMTCYLNLSLLQTLFMTPEFRNALYKWEFESEEDPVTIPYQLQRLFVLLQT  
SKKRAIETDVTTRSGWDSSEAWQQHDVQELCRVMFDAQWKQTEQADLINELYQGKLDYVRCLECGYEGWRI

FIG. 2E

DTYLDIPLIRPYGSSQAFASVEEALHAFIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMH  
 RIKLNDRMTFPEELDMSTFIDVEDEKSPQTESCTDGAENEGSCHSDQMSNDFSNDGVDGEGICLETNSGTEKISKS  
 GLEKNSLIYELFSVMAHSGSAAGGHYACIKSFDEQWYSFDDQHVSRTQEDIKKTHGGSSGSGRYSSAFASSTNA  
 YMLIYRLKDPARNAKFLLEVGEYPEHIKNLVKERELEEQEKQREREINTCKIKLFC LHPTKQVMMENKLEVHKDKTLK  
 EAVEMAYKMMDL E E V I P L D C C R L V K Y D E F H D Y L E R S Y E G E E D T P M G L L G V K S T Y M F D L L L E T R K P D Q V F Q S Y K P G  
 E V M V K V H V D L K A E S V A A P I T V R A Y L N Q T V T E F K Q L I S K A I H L P A E T M R I V L E R C Y N D L R L L S V S S K T L K A E G F F R S N K V  
 F V E S S E T L D Y Q M A F A D S H L W K L L D R H A N T I R L F V L L P E Q S P V S Y S K R T A Y Q K A G G D S G N V D D D C E R V K G P V G S L K S V  
 E A I L E E S T E K L S L Q Q Q D G N G D S S K S T E T S D F E N I E S P L N E R D S S A S V D N R E L E Q H I Q T S D P E N F Q S E E R S D S D  
 V N N D R S T S S V D S D I L S S H S S D T L C N A D N A Q I P L A N G L D S H S I T S S R R T K A N E G K K E T W D T A E E D S G T D S E Y D E S G K S  
 R G E M Q Y M Y F K A E P Y A A D E G S G E G H K W L M V H V D K R I T L A A F K Q H L E P F V G V L S S H F K V F R V Y A S N Q E F E S V R L N E T L  
 S S F S D D N K I T I R L G R A L K K G E Y R V K V Y Q L L V N E Q E P C K F L L D A V F A K G M T V R Q S K E E L I P Q L R E Q C G L E S I D R F R L R K  
 K T W K N P G T V F L D Y H I Y E E D I N I S S N W E V F L E V D G V E K M K S M S Q L A V L S R R W K P S E M K L D P F Q E V V L E S S S V D E L R E K  
 L S E I S G I P L D D I E F A K G R G T F P C D I S V L D I H Q D L D W N P K V S T L N V W P L Y I C D D G A V I F Y R D K T E E L M E L T D E Q R N E L M K K  
 E S S R L Q K T G H R V T Y S P R K E K A L K I Y L D G A P N K D L T Q D

FIG. 2F

>SGPr480\_SEQID\_73  
 M G A K E S R I G F L S Y E E A L R R V T D V E L K R L K D A F K R T C G L S Y M G Q H C F I R E V L G D G V P P K V A E V I Y C S F G G T S K G L H F N  
 N L I V G L V L L T R G K D E E K A K Y I F S L F S S E S G N Y V I R E E M E R M L H V D G K V P D T L R K C F S E G E K V N Y E K F R N W L F L N K D A F  
 T F S R W L L S G G V Y T L T D S D T P T F Y Q T L A G V T H L E E S D I D L E K R Y W L L K A Q S R T G R F D L E T F G P L V S P P I R P S L S E G L  
 F N A F D E N R D N H I D F K E I S C G L S A C C R G P L A E R Q K F C F K V F D V D R D G V L S R V E L R D M V A L L E V W K D N R T D D I P E L H M  
 D L S D I V E G I L N A H D T T K M G H L T L E D Y Q I W S V K N V L A N E F L N L F Q V C H I V L G L R P A T P E E E G Q I R G W L E R E S R Y G L Q A  
 G H N W F I S M Q W W Q Q W K E Y V K Y D A N P V I E P S S V L N G G K Y S F G T A A H P M E Q V E D R I G S S L S Y V N T T E E K F S D N I S T A S  
 E A S E T A G S G F L Y S A T P G A D V C F A R Q H N T S D N N N Q C L L G A N G N I L L H L N P Q K P G A I D N Q P L V T Q E P V K A T S L T L E G G R L  
 K R T P Q L I H G R D Y E M V P E P V W R A L Y H W Y G A N L A L P R P V I K N S K T D I P E L E L F P R Y L L F L R Q Q P A T R T Q Q S N I W N M G N V  
 P S P N A P L K R V L A Y T G C F S R M Q T I K E I H E Y L S Q R L R I K E E D M R L W L Y N S E N Y L T L D D E D H K L E Y L K I Q D E Q H L V I E V R N K  
 D M S W P E E M S F I A N S S K I D R H K V P T E K A T G L S N L G N T C F M N S S I Q C V S N T Q P L T Q Y F I S G R H L Y E L N R T N P I G M K G H M  
 A K C Y G D L V Q E L W S G T Q K N V A P L K R W T I A K Y A P R F N G F Q Q Q D S Q E L L A F L L D G L H E D L N R V H E K P Y V E L K D S D G R P  
 D W E V A A E A W D N H L R R N R S I V D L F H G Q L R S Q V K C K T C G H I S V R F D P F N F L S L P M D S Y M H L E I T V I K L D G T T P V R Y G  
 L R L N M D E K Y T G L K K Q L S D L C G L N S E Q I L L A E V H G S N I K N F P Q D N Q K V R L S V S G F L C A F E I P V P V S I S A S S P T Q T D F S S  
 S P S T N E M F T L T T N G D L P R P I F I P N G M P N T V P C G T E K N F T N G M V N G H M P S L P D S P F T G Y I A V H R K M M R T E L Y F L S S Q  
 K N R P S L F G M P L I V P C T V H T R K K D L Y D A V W I Q V S R L A S P L P P Q E A S N H A Q D C D D S M G Y Q Y P F T L R W Q K D G N S C A W C  
 P W Y R F C R G C K I D C G E D R A F I G N A Y I A V D W D P T A L H L R Y Q T S Q E R V V D E H E S V E Q S R R A Q A E P I N L D S C L R A F T S E E L

FIG. 2G

GENEMYCSKCKTHCLATKKLDLWRLPPIILHILKRFQVNGRWIKSQKIVKFPRESFDPFSAFLVPRDPALCQHKPLTP  
 QGDELSEPRILAREVKVDAQSSAGEEDVLLSKSPSSLSANISSPKGSPSSSRKSGTSCPSSKNSSPNSSPRTLGRS  
 KGRRLPQIGSKNKLSSKENLDASKENGAGQICELADALSRGHVLGGSQPELVTPQDHEVALANGFLYEACGNG  
 YSNGQLGNHSEEDSTDQREDTRIKPIYNLYAISCHSGILGGGHVVTYAKNPCKWYCYNDSSCKELHPDEIDTDSAY  
 ILFYEQQGIDYAQFLPKTDGKKMADTSSMDEDFESDYKKYCVLQ

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 MDKILEGLVSSSHPLPLKRIVVRKVVEAEHWLDEAQCEAMFDLTTRLILEGQDPFQRQVGHQVLEAYARYHRPEFES  
 FFNKTFFVLGLLHQGYHSLDRKDVAILDYIHNGKLIMSCPSVLDFSLQVEVLRMVCERPEPQLCARLSDLLTDFVQCI  
 PKGLSITFCQQLVRTIGHFQCVSTQERELREYVSQVTKVSNLLQNIWKAEPATLLPSLQEVFASISSTDASFEPVALA  
 SLVQHIPLQMITVIRSLTTDPNVKDASMTQALCRMIDWLSWPLAQHVDTWVIALKGLAAVQKFITLIDVTLLKIELVFN  
 RLWFPLVRPGALAVLSHMLLSFQHSPEAFHLIVPHVNLVHSFKNDGLPSSSTAFLVQLTELIHCHMMYHSGFPDLYEPI  
 LEAKDFPKPSEEKILINQSAWTSQSNLSASCLSRLSGKSETGKTGLNLGNTCYMNSVIAQALFMATDFRRQVLSLNL  
 NGCNSLMKKLQHLFAHTQREAYAPRIFFEASRPPWFTPRSQQDCSEYLRFLDLRHEEEKILKVQASHKPSEILEC  
 SETSLQEVASKAAVLTTETPRTSDGEKTLIEKMFGGKLRTHIRCLNCRSTSQKVEAFTDLSLAFCPSSLENMSVQDPAS  
 SPSIQDGLMQASVPGPSEEPVYNPTTAAFICDSLNEKTIGSPNEFYCSENTSVPNESNKILVNKDVQPKPGGET  
 TPSVTDLLNYFLAPEILTGDNQYCYENCASLQNAEKTMQITEEPEYLITLLRFSYDQKYHVRKILDNVSLPLVLELPVK  
 RITSFSSLSWSVDVDFDLSLAKKLKPSGTDEASCTKLVPYLLSSVWHSGISSESGHYYSYARNITSTDSSYQM  
 YHQSEALALASSQSHLLGRDSPSAVFEQDLNEMSKWFLFNDSRVFTFTSFQSVQKITSRFPKDTAYVLLYKKQHST  
 NGLSGNNPTSGLWINGDPPLQKELMDAITKDNKLYLQEQLNARARALQAASASCSFRPNFGDDNDPPGSCGPTGG  
 GGGGGFNTVGRLVF

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 MAPRLQLEKAAWRWAETVRPEEVSQEHIETAYRIWLEPCIRGVCRRNCKGNPNCLVGIGEHWLGEIDENSFHNIDDP  
 NCERRKNSFVGLTNLGATCYVNTFLQWFLNLELRQALYLCPTCSDYMLGDGIEEKDYEPQTICEHLQYLFALLQ  
 NSNRRYIDPSGFVKALGLDTGQQQDAQEFSKLFMSLLEDTLQKQKNDVNRNIVQQQFCGEYAYVTVCNQCGRESKLL  
 SKFYELNLIQGHKQLTDCISEFLKEEKGDNRYFCENCQSKQNAIRKIRLLSLPCTLNQLMRVFDRTGTGHHKKLN  
 TYIGFSEILDMEPYVEHKGSVYVELSAVLHHRGVSAYSGHYIAHVKDPQSGEWYKFNDIEDIEKMEGKKLQLGIEEDLE  
 PSKSQTRPKCGKGTCHSRNAYMLVYRLQTQEKPNNTTVQVPAFLQELVDRDNSKFEWCIEMAEMRKQSVDKGKAK  
 HEEVKELYQRLPAGAEPEYFVSLWQLKWLDESTPTKPIDNHACLCSHDKLHPDKISIMKRISYAADIFYSRYGCGPR  
 LTVKALCKECVVERCRILRLKNQLNEDYKTVNNLLKAAVKGDFWVGKSSLSRWRQLALEQLDEQDGAEQSNGKM  
 NGSTLNKDESKEERKEEEEELNFNEDILCPHGELCISENERRLVSKEAWSKLQYFPPKAPEFPSYKECCSQCKILEREG

FIG. 2H

EENEALHKMIANEQKTSPLNLFQDKNRPCLSNWPEDTDVLYVSQFFVEEWRKFVRKPTRCSPVSSVNSALLCPHG  
 GLMFTFASMTKEDSKLIALWPSEWQMIQKLFVVDHVIKITRIEVDVNPSETQYISEPKLCPECREGLLCQQQRDLREY  
 TQATIVYHKVVDNKKVMKDSAPELNVSSSETEEDKEEAKPDGEKDPDFNQSNNGTKRKQKISHQNIAYQKQVIRRS  
 RHRKVRGEKALLVSANQTLKELKIQIMHAFVAPFDQNLSIDGKILSDDCATLGTGLGPIESVILLKADEPIADYAAAMDDV  
 MQVCMPEEGFKGTGLLGH

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MLSSRAEAAAMTAADRAIQRFLRTGAARYKVMKNWGVIGGIAAALAGIYIWWGPITERKKRRKGLVPLVNLGNTCF  
 MNSLLQGLSACPAFIRWLEETSQYSRDQKEPPSHQYLSLTLHLLKALSCQEVTDDEVLDASCLLDVLRMYRWQISS  
 FEEQDAHELHFVITSSLEDERDRQPRVTHLFDVHSLQQSEITPKQITCRTRGSPHPTSNHWKSHQHPFHGRLTSNMV  
 CKHCEHQSPVRFDTFDSLSPAAATWGHPLTDHCLHFFISSESVRDVCDNCTKIEAKGTLNGEKVEHQRTTTFVKQ  
 LKLGKLPQCLCIHLQRLSWSSSHGTPLKRHEHVQFNEFLMMDIYKHYLLGHKPSQHNPKNKNPGTLELQDGPAPT  
 PVLNQPGAPKTIQIFMNGACSPSLLPTLSAPMPFPLPVVPDYSSSTYLFRLMAVVVHGDHMHSGHFVYRRSPPSARN  
 PLSTSNQWLWVSDDTVRKASLQEVLSSSAYLLFYERVLSRMQHQSCECKSEE

>SGPr427\_SEQID\_77

MDLGPDAAGGGPLAPRRRRSLRRLFSRLLALGSRSPGDSPRPQPGHCDGDGEGGFACAPGPVPAAPGSP  
 GEERPPGPQQLQLPAGDGA RPPGAQGLKNHGNTCFMNAVQC LNTDLLAEFLALGRYRAAPGRAEVTEQLAALV  
 RALWTRREYTPQLSAEFKNAVSKYGSQFGNSQHDALFLLWLDRVHEDLEGSSRGPVSEKLPPEATKTSNCLSPS  
 AQLPLGQSFVQSHFQAQYRSSLTCPHCLKQSNFTDFPLCVSLPIPLRQTRFLSVTLVFPSSQRFLRVGLAVPILSTVA  
 ALRKMVAEEGGVPADDEVILVELYPSGFQSFDEEDLNTIAEGDNVYAFQVPPSPSQGTL SAHPLGLSASPRLAAREG  
 QRFSLSLHSESKVLIIFCNLVGSGQQA SRFPPFLIREDRAVSWAQLQQSILSKVRHLMKSEAPVQNLGSLFSIRVVGL  
 SVACSYLSPKDSRPLCHWAVDRVLHLRRPGPPHV/KLAVEWDSSVKERLFGSLQEERAQDADSVWQQQAHHQHQH  
 SCTLDECQFYTKEEQLAQDDAWKCPHCQVLQQGMVKLSLWTLPDILIHILKRFQCVGERRNKSLTLVKFPLSGLNMA  
 PHVAQRSTPEAGLGPWPSWKQPDCLPTSYPDLFDLYAVCNHHGNLQGGHYTAYCRNSLDGQWYSYDDSTVEP  
 LREDEVNTRGAYILFYQKRNSIPPWSASSSMRGSTSSSLSDHWLLRLGSHAGSTRGSLLSWSSAPCPSLPQVPDSPIF  
 TNSLCNQEKGGLPRRLVRGVKGRSISMKAPTTSSRAKQGPFTMPLRWSFGSKEKPPGASVELVEYLESRRRPRST  
 SQSIVSLLTGTADEDEKSASPRSNVALPANSEGGRAIERGPAVPCPSAQPNHCLAPGNSDGPNTARKLKENAGQD  
 IKLPRKFDLPLTVMPSEHEKPARPEGQKAMNWKESFQMGSKSPSPYMGFSGNSKDSRRGTSELDRLPLQGTTLT  
 LRSVFRKKENRRNERAEVSPQVPPVSLVSGGLSPAMDGOAGPSPPALRIPEGLARGLGSRLERDVWSAPSSRLPR  
 KASRAPRGSALGMSQRTVPGEQASYGTQVRVKYHTLSLGRKKTLPESSF

>SGPr092\_SEQID\_78  
 MQLVLRVTIFLPWCFAVPVPPAADHKGWDFVEGYFHQFFLTKEESPLLTQETQTQLLQQFHRNGTDLLDMQMHHALL  
 HQPHCGVPDGSSTISPGRCCKWNKHTLTIRIINYPHDMKPSAVKDSIYNAVSIWNSVNTPLIFQQVQNGDADIKVSFWQ  
 WAHEDGWPFDPGPGGILGHAFLPNSGNPGVWHFDKNEHWSASDTGYNLFLVATHEIGHSLGLQHSNGNQSSIMYPTYW  
 YHDPRTFQLSADDIQRHQHLYGEKCSSDIP

>SGPr359\_SEQID\_79  
 MKVLPASGLAVFLIMALKFSTAAPSLVAASPRTRWRNNYRLAQAYLDKYTNKEGHQIGEMVARGSNSMIRKIKELQAF  
 FGLQVTGKLDQTTMNVIKKPRCGVPDVANYRFLPGEKWKKNLTLYRISKYTPSMSSVEVDKAVEMALQAWSSAVPL  
 SFVRINSGEADIMISFENGHDGDSYPFDGPRGTLAHAFAPGEGLGDTDFDNPEKWTMGNTGNFNLFTVAAHEFGHAL  
 GLAHS TDPSALMYPTYKYKNPYGFHLPKDDVKGIQALYGPRKVFLGKPTLPHAPHKPSIPDLCDSSSFDVATMLGK  
 ELLLFKDRIFWRRQVHLRTGIRPSTITSSFPQLMSNVDAAYEAERGTAYFFKGPHYWITRGFMQGPRTIYDFGFP  
 RHVQQIDAAVYLREPQKTLFFVGDEYYSYDERKRKMEKDYPKNTEEEFSGVNGQIDAAVELNGYIYFFSGPKTYKYDT  
 EKEDVSVWKSSSWGIC

>SGPr104\_1\_SEQID\_80  
 MNVALQELGAGSNMVEYKRATLRDEDAPETPVEGGASPDAMEVGFQKQTRQLLGSRTQLELVLAGASLLLAALLGC  
 LVALGVQYHRDPSHSTCLTEACIRVAGKILES LDRGVSPCEDFYQSCGGWIRRNPLPDGRSRWNTFNSLWDQNQAI  
 LKHLLNTTFNSSSEAEQKTQRFYLSCLQVERIEELGAQPLRDLIEKIGGNITGPWDQDNFMEVLKAVAGTYRATPFF  
 TVYISADSKSSNSNVIQVDSGLFLPSRDYYLNRANKEKVLTA YLDYMEELGMLLGGPRSTREQMQQVLELEIQLANI  
 TVPQDQRRDEEKIYHKMSISELQALAPSMDWLEFLSFLSPLSDSEPVVYGM DYLQQVSELINRTEPSILNNYLIW  
 NLVQKTTSSLDRRFESAQEKLETLTYGTTKSCVPRWQTCISNTDDALGFALGSLFVKATFDRQSKEIAEGMISEIRTAF  
 EEALGQLVWMDEKTRQAAKEKADAIYDMIGFPDFILEPKELDDVYDGYEISED SFFQNMLNLYNFSAKVMADQLRKPP  
 SRDQWSMTPQTVNAYYLP TKNEIVFPAGILQAPFYARNHPKALNFGGIGVVMGHELTHAFDDQGREYDKEGNLRPW  
 WQNESLA AFRNHTACMEEQYNQYQVNGERLNGRQTLGENIADNGLKAAYNAYKAWLRKHGEEQQLPAVGLTNHQ  
 LFFVGFQAQVWC SVRTPESSHEGLVTDPHSPARFRLVGLT LSNRDLRHFHFGCPV GSPMNP GQLCEVW

>SGPr303\_SEQID\_81  
 MPEKRPFERLPADVSPINCSLCLKPDLLDFTFEGKLEAAQVRQATNQVMNCADIDIITASYPEGDEEIHATGFNYQN  
 EDEKVTLSFPSTLQTGTGLKIDFVGELNDKMKGFYRSKYTTTPSGEVRYAAVTQFEATDARRAFPCWDERAIKATFDIS  
 LVWPKDRVALSNMNVIDRKPYPD DENLVEVKFARTPV TSTYLVAFWGEYDFVETR SKDGV CVCVYTPVGKAEQKGF  
 ALEVAAKTLPFYNDYFNVPYPLPKIDLIAADFAAGAMENWDLVTYRETALLIDPKNSCSSSRQWVALVVGHEL AHQWF

FIG. 21

GNLVTMEWTHLWLNFGFASWIEYLCVDHCFPEYDIWTQFVSADYTRAQELDALDNSHPIEVSVGHPSEVDEIFDAIS  
YSKGASVIRMLHDYIGDKVKKKTLIS

>SGPr402\_1\_SEQID\_82

MRPAPIALWLRLVLALVRPRAVGWAPVAPIYVSSWAVQVSQGNREVERLARKFGFVNLGPIFPDGGQYFHLRHRG  
VVQQSLTPHWGHHHLKKNPKVQWFQQQLRRVRKRSVWPTDPWFQSKQWYMNSEAPDLSILQAWSQGLSGQGI  
VSVLDDGIEKDHPLWANYDPLASYDFNDYDPDPQRYTPSKENRHGTRCAGEVAAMANNFGCGVGAFNARIGG  
VRMLDGTITDVIEAQSLSLQPHIHSASWGPEDDGRITVDGPGILTREAFRRGVTKGRGGLGLFIWASGNGGLHYD  
NCNCDGYTNSIHTLSVGSTTQQGRVPWYSEACASTLTTYSSGVATDPQIVTTDLHHGCTDQHTGTSASAPLAAGMI  
ALALEANPFLTWDRMQHLVVRASKPAHLQAEDWRTNGVGRQVSHHYGYGLLDAGLLVDTARTWLTPQQRKCAVR  
VQSRPTPIPLYIRENVSAAGLHNSIRSLHVVQAQLTLYSRRGDLISLTPMGTSTLVAIRPLDVSTEGYNNWVF  
MSTHFWDENPQGVWTLGLENKGYFNTGLTRYTLTYGTAEDMTARPTGPQVTSSACVQRDTEGLCQACDGPAYI  
LGQLCLAYCPRFFNHTRLVTAGPGHTAAPALRVCSCHASCYTCRGGSPRDCSTCPPSSLTLDQQGSCMGPTTPD  
SRPRLRAACPHHRCPASAMVLSLLAVTLGGPVLGMSMDLPLYAWLSRARATPTKPQVWLPGAT

FIG. 23

>SGPr434\_SEQID\_83

GPGRQGGCAGRRSTALPLRAPLRPRPGPRSERMGAATCRGSRIPSGPPVQGERSAPRFGVTSLSLWPADFKDNW  
RIAGSRQEVALAGEPADQQQLRLPYRQTLGYKEDTTPVCGEPWWSEDLMTTRHWPWEVSLRMENEHVCGG  
ALIDPSWVTAACHCSQGTKEYSVVLGTSKLQPMNFSRALWVPVRDIIMHPKYWGRAFMGDVALVHLQTPVTFSEYV  
QPICLPEPNFNLKVGTCWCWVTGWSQVKQRFSGSTANSMLTPELQEAEEFIMDNKRCDRHYKKSFFPPVPLVLGDMI  
CATNYGENLCYGDSSGGPLACEVEGRWILAGVLSWEKACVKAQNPVGVTYTRITKYTKWIKQMSNGAFSGPCASACLLF  
LCWPLQPQMGS

>SGPr446\_1\_SEQID\_84

ILTPVCGRTPLRIVGGVDAEEGRWPWQVSVRTRKGRHICGGTLVTATWVLTAGHCISSRFHYSVKMGRSVYNTSV  
VVSVQRAFVHPKFSTVTIRNDLALLQLQHPVNFTSNIQIPICIPQENFQVEGRTRCWVTGWGKTPERGEKLAISEILQDV  
DQYIMCYEECNKIQKALSSTKDVIIKGMVCGYKEQKDKSCQGDSCGRLACEYNDTWVQVGVSWGIGCGR

>SGPr447\_SEQID\_85

MGARGALLALLARAGLGKPEACGHEIHALVAGGVESARGRWPWQASLRLRRRHRCGGSLLSRRWLAAHCF  
QKHYYPSEWTVQLGELTSRPTPNLRLAYSSRYKVQDIIVNPDALGLVRNDIALLRASSVTYNAYIQPICIESSTFNFBVH

RPDCWVTGWGLISPGTLPYPYNLREAQVTILNTRCNLYFEQPSRSMIWDSMFCAGAEAGSVDTCCKGDSGGPL  
VCDKDLWYQVGVSWGMDCCGPNRPGVYTNISVYFWIRRMVSHSTPRNPQSLLLLLALLWAP

>SGP432\_1\_SEQID\_86

MGSTWGSPPGWVRLALCLTGLVLSYALHVKAARARDRYALCDVGTASCSRVSFSSRWGRGFLVEHVLGQDSIL  
NQNSIFGCFYTLQLLLGLQAAQRACGQRPKPQEGNTVPGEWPWQASVRRQGAHICSGSLVADTWVLTAAH  
CFEKAATELNSWSVLSLQREGSLPGAEEVGAALQLPRAYNHYSQSDALLQLAHTTHTPLCLPQPAHRFPF  
GASCWATGWDQDTSAPGTLNRLRLISRPTNCIYNQLHQRHLSNPARPGLCGGPQGVQGPCQGDGSGGPVL  
CLEPDGHVWQAGIISFASSCAQEDAPVLLTNTAAHSSWLQARVQGAFLAQSPETPEMSDEDCVACGSLRTAGPQ  
AGAPSPWPWEARLMHQQLACGGALVSEEAVLTAHCFIGRQAPPEWSVGLGTRPEEWGLKQLLHGAYTHPEGG  
YDMLLLLAQPVTLGASLRPLCLPYPDHLPDGERGWVGRARPAGISSLQTVPTLLGPRACSRHAAPGGDGSPI  
LPGMVCTSAVGELPSCEGLSGAPLVHEVRGTWFLAGLSFGDACQGPAPAVFTALPAYEDWVSSLDWQVYFAEEP  
EPEAEPGSCLANISQPTSC

>SGP529\_SEQID\_87

MRAPHLHLSAASGARALAKLLPLLMAQLWAAEAALLPQNDTRLDPAYGAPCARGSQPWQVSLFNGLSFHCAGVLV  
DQSWVLTAAHCGNKPLWARVGGDDHLLLLQGEQLRRTTRSVVHPKYHQSGGPIPRRTDEHDLMLLKLRPWVPGPR  
VRALQLPYRCAQPGDQCQVAGWGTTAARRVKYNKGLTCSSITILSPKECEVFYPGVVTNNMICAGLDRGQDPCQSD  
SGGPLVCDETLQGLSWGVPYPCGSAQHPAVYTQICKYMSWINKVIRSN

>SGP428\_1\_SEQID\_88

NVQCGHRPAFPNSSWLPFHERLQVQNGECPWQVSIQMSRKHLCCGSLHWWWVLTAAHCFRRRTLLDMAVNVTVW  
MGTRTFSNIHSEKQVQKVIHKYKPPQLDSDLSLLLATPVQFSNFKMPVCLQEEERTWDWCWMAQWVTNGYD  
QYDDLNMHLEKLRVVISRKECAKRVNQLSRNMICAWNPEGTNGQGPGEVGGPLVCQKKNKSTWYQLGIISWGVGC  
GQKNMPGVYTELSNYLLWIERKTVLAGKPYKYEPDSVYALLSPWAILLYFVMLLLS

>SGP425\_SEQID\_89

MENMLLWLIFFTPGWTLIDGSEMEWDFMWHLRKVPRIVSERTFHLTSPAFAEADAKMMVNTVCGIECQKELTPSLSEL  
EDYLSYETVFENGTRTLTRVKVQDLVLEPTQNTTKGVSVRKRQVYGTDSRFSILDKRFLTNFPFSTAVKLSTGCSGIL  
ISPDHVLTAACHCVHDGKDYVKGSKKLRVGLLKMNRKSGGKKRRGSKRSRREASGGDQREGTRELPERAKGGRRR  
KKSGRGQRIAEGRPSFQWTRVKNTHIPKGWARGMGMDATLDYDALLELKRHHKKYMELGISPTIKKMPGGMHFS

FIG. 2K

GFDNDRADQLVYRFCVSDESNDLLYQYCDAESGSTGSGVYRLKDPDKKNWKRKIIAVYSGHQWVDVHGVQKDYN  
VAVRITPLKYAQICLWIHGNDANCAYG

>SGP1548\_SEQID\_90  
MGDPEGSAEWGWGKIPVVRNLLTVDGISLCLEGSWWRQKGPASPGFSLPRLQPNPGPSSSTMWLLLTLSFLLA  
STAAQDGDKLLLEGDECAPHSQPWQVALYERGRFNCASLSPHWLWLSAAHCQSRFMRVRLGEHNLKRDRGPEQLR  
TTSRVIPHPRYEARSHRNDIMLLRLVQPARLNQVRPAVLPTRCPHPGEACVSGWGLVSHNEPGTAGSPRSQVSLP  
DTLHCANISIISDTSCKSYPGRLTNTMVCAGAEGRGAESCEGDSGGPLVCGGILQGVSWGDVPCDNTTKPGVYTKV  
CHYLEWIRETMKRN

>SGP1396\_SEQID\_91  
MGPAGCAFTLLLLGISVCGQPVSRRVGGQDAAAGRPWQVSLHFDHNFICGGSLVSERLILTAACHCIQPTWTTFS  
YTVWLGSTVGDSTRKRVYVSKIVHPKYQDTTADVALLKSSQVFTTSAILPICLPSTVKQLAIPFCWVTGWGKVKE  
SSDRDYHSALQEAEEVPIIDRQACEQLYNPIGIFLPALEPVIKEDKICAGDTQNMKDSCKGDSGGPLSCHIDGWWIQTGV  
VSWGLECGKSLPGVYTNVYYQKWINATISRANNLDFSDFLFPIVLLSALLRPSCAFGPNTHRVGTVAEAVACIQGWE  
ENAWRFSPRGR

>SGP1426\_SEQID\_92  
MMYAPVEFSEAEFSRAEYQRKQFWDVRLALFTLAIIGIAGIVTHFVVEDDKSFYYLASFKVTNIKYKENYGIRSS  
REFIERSHQIERMMSRIFRHSSVGGRFIKSHVIKLSPEDEQVDILVLIFRYPSTDSAEQIKKIEKALYQSLKTKQLSLTIN  
KPSFRLTRCGIRMTSSNMPLPASSSTQRIVQGRETAMEGEWPWQASLQLIGSGHQCCGASLISNTWLLTAAHCFWKNK  
DPTQWIAFTGATITPAVKRNVRKIILHENYHRETNENDIALVQLSTGVEFSNIVQRVCLPDSSIKLPPKTSVFTGFGSI  
VDDGPIQNTLRQARVETISTDVCNRKDVYDGLITPGMLCAGFMEGKIDACKGDSGGPLVYDNHDIWYVGVSWGQSC  
ALPKKPGVYTRVTKYRDWIAASKTGM

>SGP1552\_SEQID\_93  
RIAEGLDAEEGEWPWQASLPQNNVYRRGATWLSNSWLITAAHCFIRVHDPKEWNVLSPQTQSNIKNVIQENYHYP  
AHDNDIAVWHLSSPVLVYTSNIQKACLPDVNYIFLYNSEAVVTAWGSFKPLRTTSNVLHKGLVKIIDNRTCNNGEADGRVI  
TSGMLCAGFLEPRVDACQGDGGPLVGTDSKGILAKGSLVLKAGVNERALPNKPSVYTVQVYY

FIG. 2L

>SGPr405\_SEQID\_94  
 MVSKGGVAAEPEPHYCEDSERGNLTGPGSLPRGGIEVGMEEFPGSGEGCVKPHHEAAAREGAGRGKRAVPGPK  
 RRQGSAGPAAGWTLEQETRGDVLKNERADEEILRLAPGKGRLPIDSKHLKPVISSFPVRSQELGEGAGAGTLR  
 GKMAEFNWSMAFKGPAAGHEERLNSVSSRAKKGIGWDVAAASLRGVDHFDLPPPLQVREELEACAFRVQVQGLRL  
 YEDDQRTKVVEIRHPQYNESLAQGGADIALKLEAPVPLSELIHPVSLPSASLDVPSGKTCWVTGWGVIGRGELL  
 WPLSLWEATKVRNSVLCNQTCRRRFPNSHTEFERLIKDDMLCAGDGNHGSWPGDNGGPLLCCRNCWTWQVEV  
 SWGKLCGLRGYPGMYTRVTSYVSWIRQPCPSAQTPAVVRRFVLPNPDVEALTPSVMGSGAPLPPAPDLQEA  
 MRTRACERMYHKGPTAHGQVTHKAAMPACAGRKGGSCQAALRTEDLTPTTPNTEVSPRADPRLSQPEDIWPEWAW  
 PVVGTMLLLLLFLAVSSLGSCSTGSPAPVENDLVGIVGGHNTPEVWVAVGADRRSLHFEGHRPVHLPDSHQG  
 CVSVRGPGAECQDPRPPNYSVFFLGADIALKLTSSLEFTSDNCWNTGWMVGLLDMMLPPYRPPQVKVLT  
 SNADCEQTYDAFPGAGDRKFIQDDMICAGTRRTWKGDSGGPLVCKKGTWLQAGVSWGFSYSDRPSIGVYTR  
 PETSWQGANHADAQRPAGRVPTMQRPDMGQGEWVCRPFTHVTCYPTAIRPFTHVTCYLMVAVPSTLTHVTCYP  
 TAVPRPFTHVTCYLMVAVPSTLTHVTCYMAVPRPFTHVTCYMAVPSLTHVTCYPTAIRPFTHVTCYMAVPRPSTTP  
 PATRRPSPAPSTPATRWPSPGSPMSPATR

>SGPr485\_1\_SEQID\_95  
 MLLFSVLLLLSLVTRTQLGPRTPLEAGVAILGRARGAHRQPHPSPVSECGDRSIFEGRTYRITGGMEAEVGE  
 FPWQVSIQVRSEPFCCGGSILNKKWILTAHCLYSEELFPEELSVLGTNDLTSPSMEIKEVASIILHKDFKRANMDNDIA  
 LLLASPIKLDLKVPICLPTQPGPATWRECWAGWGQTNAADKNSVKTDLMKAPMIMDWECECKMFPLTKNMLC  
 AGYKNESYDACKGDSGGPLVCTPEPGEKWYQVGIISWGKSCGEKNTPGIYTSLVNYNLWIEKVTQLEGRPFNAEKRR  
 TSVKQKPMGSPVSGVPEPGSPRSWLLCPLSHVLFRAILY

>SGPr534\_SEQID\_96  
 MASLWLLSCFSLVGAFFGGGVPPIHPVLSGLSRVINGEDAVPGSWPWQVSLQDKTGTFHCGGSLISEDWVTAHC  
 GVRTSDVWVAGEFDQGSDEENIQVLKIAKVFKNPKFSILTVNNDITLLKATPARFSQTVSAVCLPSADDDFPAGTLCAT  
 TGWGKTKYNANKTPDKLQQAALPLLSNAECKKSWGRRITDVMICAGASGVSSCMGDSGGPLVCQKDGAWTLVGIVS  
 WGSRTCSTTTPAVYARVTKLIPWWQKILAAAN

>SGPr390\_SEQID\_97  
 MEPTVADVHLVPRTTKEVPALDAACCRASIGWATSLVLTGLVLLGGMNNSRHAALRAATLPKGVSVTPEASKTT  
 NPPEGRNSEHIRTSAARTNSGHTIFKCKNTQPFSLTQGFHVDHTAELRGIRWTSSLRRETSDYHRTLTPMLEALLHFLLR

PLQTLGLEELLQRGIRARLREHGISLAAYGTIVSAELTGRHKGLAERDFKSGRCPGNSFSCGNSQCVTKNPEC  
 DDQEDCSDGDEAHCECGLQPAWRMAGRIVGGMEASPGFEPWQASLRENKEHFCAAIINARWLVSAAHCFNEFQ  
 DPTKWAYVGATYLSGSEASTVRAQVQVQKHPLYNADTADFVAVLELTSPLPFRHIQPVCLPAATHIFPPSKKCLIS  
 GWGYLKEDFRKHLPRPAMVKEVLQKATVELLDQALCASLYGHSLTDRMVCAGYLDGKVDSCQDGGGGLVCEEPS  
 GRFFLAGIVSWGIGCAEARPGVYARVTRLRDWILEATTKASMPAPTMAPAPAAPSTAWPTSPESPVWSTPTKSMQ  
 ALSTVPLDWVTVPKQCECGARPAMEKPTRVWGGFGAASGEVPWQVSLKEGSRHFCGATVVGDRWLLSAAHCFNHT  
 KVEQVRAHLGTASLLGLGGSPVKIGLRVWLHPLYNPGILDFDLAVLELASPLAFNKYIQPVCLPLAIQKFPVGRKCMIS  
 GWGNTQEGNATKPELLQKASVGIIDQKTCVLYNFSLTDRMICAGFLEGKVDSCQDGGGGLVCEEPS  
 WGIGCAQVKKPGVYTRITRLKGWILEMSSQPLPMSPPSTTRMLATTSPRTTAGLTVPGATPSRPTPGAASRVTGQPA  
 NSTLSAVSTTARGQTPFPDAPEATHTQLPDCGLAPAAALTRIVGSAAGRGWQVSLWLRREHRCGAVLVAER  
 WLLSAAHCFDVYGDPKQWAAFLGTPLSGAEGQLERVARIYKHPFYNLYTLDYDVALLELAGPVRRSRLVRPICLPEP  
 APRPPDGTRCVITGWGVSREGGSMARQLQKAAVRLLSEQTCRRFYVPVQISSRMLCAGFPQGGVDSCSGDAGGPLA  
 CREPSGRWLTGVTWGYGCGRPHFPVYTRVAAVRGWIGQHIQE

>SGP521\_SEQID\_98

MARSLLLPLQILLSLALETAGEEAQDKIIDGAPCARGSHPWQVALLSGNQLHCGGVLVNERWVLTAAHCKMNEYTV  
 HLGSDTLGDRRAQRIKASKSFRHPGYSTQTHVNDLMLVKLNSQARLSSMVKKVRLPSRCEPPGTCTVSGWGTTTS  
 PDVTFPSDLMCVDVKLISPQDCTKVYKDLLENSMLCAGIPDSKKACNGDGGGLVCRGTLQGLVSWGTFPCGQPN  
 DPGVYTQVCKFTKWINDTMKKHR

>SGP530\_1\_SEQID\_99

VSTVCGKPKVVGKIYGGRDAAAGQWPWQASLLYWGSHLCGAVLIDSCWLVSSTHCFLNKSQAPKNYQVLLGNIQLY  
 HQTQHTQKMSVHRIITHPDFEKLHPFGSDIAMLQLHPLMNFTSYIVPVCLPSRDMQLPSNVSCWITGWGMLTEDHKRV  
 QLSPPFYLQEGKVGLIENTLNTLYGQRTAKARPKLCTRRCCVGGYFSTGKSICKGDSGGPLVCYLPSAWVLVGLAS  
 WGLDCRHPAYPSIFTRVTFYFINWIDEIMRLTPLSDPALAPH

>SGP520\_SEQID\_100

MLLAVLLLLPLPSSWFAHGHPLYTRLPPSALQVFTLLGAETVLRNLDYVCEGPCGERRRSTANVTRAHGRIVGSA  
 APPGAWPWLVRQLGGQPLCGGVLVAASWVLTAAHCFVGCSTRSAPNELLWTVTLAEGSRGEQAEVVPVNRILPH  
 PKFDPRTFHNDLALVQLWTPVSPGGSARPVCLPQEPQEPAGTACIAGWGALFEDGPEAEAVREARVPLLSTDTOR  
 RALGPGLRPSTMLCAGYLAGGVDSCQDGGGGLTCSEPGRPRPREVLFGVTSWGDGCGEPKPGVYTRVAVFKDWL  
 QEQMSAASSSREPSCRELLAWDPPQELQADAARLCAFYARLCPGSQGACARLAHQQLQRRRRCELRSALTLLGL

LRNAQELLGPRPGLRLAPALPAPALRESPLHPARELRHSGSRAAGTRFKRRPEPRGEANGCPGLEPLRQKLA  
ALQGAHAWILQVPSEHLAMNFHEVLADLGSKTLTGLFRAWVRAGLGGRHVAFSGLVGLEPATLARSLPRLVQALQA  
FRVAALAEGEPEGPWMDVGQGPGLERKGGHPLNPQVPPARQP

>SGPr455\_SEQID\_101

MSPDIALLYLKHVKVFGNAVQPICLPDSDDKVEPGILCLSSGWGKISKTSYNSVLQEMELPIMDDRACNTVLKSMNLP  
PLGRTMLCAGFPDWGMDACQDGGPLVCRGGGIWILAGITSWAGCAGGSPVRNNHVKASLGIFSKVSELMDF  
ITQNLFTGLDRGQPLSKVGSRYITKALSSVQEVNGSQRDKIILKFTSLDMEKQVGDHDYVSLRSSGVLFSKVCCKIL  
PSPLLAETSEAMVPFVSDTEDSGGFELTVTAQKSEAGSGCSLAILVEEGTNHSAKYPDLYPSNTRCHWFICAPEK  
HIIKLTFFEDFAVKFSPNCIYDAVVIYGDSEKHKLAKLCGMLTITSFSSNMVYFKSDGKNRLQGFKARFTILPSESIN  
KFEPKLPQNNPVSTVKAILEDVCGIPFSPQWLSRRIAGGEEACPHCWQVGLRFLGDYQCGGAINPVWILTAAH  
CVQLKNNPLSWTIIAGDHDNRNLKESTEQVRRAKHIIVHEDFNTLSYDSIALIQLSSPLEYNSVVRPCLPHSAEPLFSS  
EICAVTGWGSAELSINVSSLDGGLASRLQQIQVHVLEREVCEHTYSAHPGGITEKMICAGFAASGEKDFCQGDGSG  
GPLVCRHENGPFVLYGIVSWGAGCVQWPWPGVFARVMIFLDWIQSKINGKLFNSVIKTTTSFFRVGLTVSCCSEAELE  
KPRGFFPTPRYLLDYRGRLECSWVLRVSASSMAKFTIEYLSLLGSPVCQDSVLIYEERHSKRKTAGGLHGRRLYSMT  
FMSPGPLVRVTFHALVRGAFGISYVLKVLGPKDSKITRLSQSSNREHLVPCEDVLLTKPEGIMQIPRNSHRTTMCQW  
RLVAPLNHIIQLNIINFPMKPTTFVCHGLRVYEGFGPGKKLGRMLMSTELSWFLSQFSTKTTASCGETAVSMKMMY  
TSIFLALQNTCYHALPHEVVLRIK

>SGPr507\_2\_SEQID\_102

MKYVYFYLGLAGTFFADSSVQKEDPAPYLVLKSHFNPVGLIKPSWVLAPAHCYLPNLKVMGLNFKSRVRDGT  
QTINPIQIVRYWNYSHSAPQDDMLIKLAKPAMLNPKVQPLTATTNVRPGTVCLLSGLDWSQENSGLWQLEPPGHLT  
LHRGPAIPDWQRHNSHEQGRHPDLRQNLAPVMSDRECQKTEQGKSHRNSLCVKFKVFSRIFGEVAVATVICKDKL  
QGIEVGHFMMGGDVGIYTNVYKYVSWIENTAKDK

>SGPr559\_SEQID\_103

MGENDPPAVEAPFSRSLFGLDDLKISPVAPDADAVAAQILSLLPLKFFPIVIGIILALAILGLGIHFDSCGKYRCRSSF  
KCIELIARCDGVSDCKDGEDEYRCVRVGGQNAVQLQVFTAASWKTMCSDDWKGHYANVACAGLGFPSYVSSDNLRV  
SLEGQFREEFVSIDHLLPDDKVTAHHHSVYVREGCASGHVTLQCTACGHRRGYSSRIVGGNMSLLSQWVPWQASLQ  
FQGYHLCGGSVITPLWITAAHCVYDLYLPKSWTIQVGLVSLDNPAPSHLVEKIVYHSKYKPKRLGNDIALMKLAGPLT  
FNEMIQPVCLPNSEENFPDGKVCWTSGWGATEDGAGDASPVLNHAAVPLISNKICNHRDVYGGIISPSMLCAGYLTG  
GVDSCQGDGGPLVCQERRLWKLVGATSFGIGCAEVNKPVGVTYTRVTSFLDWIHEQMERDLKT

>SGPr567\_1\_SEQID\_104

>SGPr479\_1\_SEQID\_105  
MAAPASVMGPLGPSALGILLLLLVAPPRVAALVHRQPENQGISLTGSVACGRPSMEGKILGGVPAPERKWPWQVSV  
HYAGLHVCGGSILNEYWWLSAAHCFHRDKNIKIYDMYVGLNLRVAGNHTQWYEVNRVILHPTYEMYHPIGGDVALVQ  
LKTRIVFSESVPVCLATPEVNLTSA NCWATGWGLVSKQGETSDELQEVQLPILEPWCHELLYGHMSYIMPDMLCAGD  
ILNAKTVCEGDSGGPLVCEFNRSWLQIGIVSWGRCNSPLYPGVYASVSFYSKWICDNIETPTPAQPAPALSPALGPT  
LSVLMAMLAGWSVL

>SGPr489\_1\_SEQID\_106  
MSLKMILSRNKLILLGIVFFERGKSATLSLPKAPSCGQSLVKVQPWNYFNIFSRILGGSQVEKGSYPWQVSLKQRQKH  
ICGGSIVSPQWVITAACHIANRNVSTLNTAGEYDLSQTDPEQTLTIETVIIHPHFSTKKPMDYDIALMKAGAFQFGH  
FVGPICLPRLREQFEAGFICTAGWGRLTEGGVLSQVLQEVNLPILTWEECVAALLTKRPISGKTFCLCTGFDPDGGRDA  
CQGDSSGSLMCRNKKGAWDGWSIWEAQVGGSLERSRPSLGNKVRLCLTNFFFKLAGCGTWCSEQDVIIVSGA  
EGKLHFPESLHLYYESKQRCVWTLTVPEEMHVLLSFSHLDVESHSHSYLSMYSLEDRIPIGKFCGESLPSSILIGSNSLR  
LKFVSDATDYAAGFNLTALKPNYIPGCSYLTVLFEELIQLSNYPENYSDKANCDWIFQASKHHLIKLSFQQSLEIEES  
GDCTSDYVTVHSDVERKKEIARLCGYDVPTVLPSPSSIMLSIFHSDENGTCRGFQAIVSFIPKAVYPDLNISISEDESMFL  
ET

>SGPr465\_1\_SEQID\_107  
RWPWQASLLYLGGHICGAALDSNWVSAAHCFQRCIFPPRAPLSTNPSDYRILLGYDQDQSSHPTESKQMTVNKIMV  
HADYNELHRMGSDITLLQLHHHVEFSSHILPACLPETTTWLAPDSSCWISGWMVTEDVFLPEPFLQEAEEVGVMDN  
TVCGSFFQPQYPGQPSSSDYTIHEDMLCAGDLITGKAICRVNSRGPLVCPLNGTWFLMGLSSWSLDCCSPVGPVRVFT  
RLPYFTNWISQKKRESTPPDPALAPPQETPPALDSMTSQGIVHKPGLCAALLAAHMFLLLLILLGSL

>SGP524\_1\_SEQID\_108  
MDKENSQVSAADLKISNISQVSAQKLPVRRPPLPGRPPQRPQKAKPKKQKVKVFWNVQNKIIL  
FTVFLFILAIAWTLLWLYISKTESKDAFYFAGMFRITNIEFLPEYRQKESREFLSVRTVQQVINLVYTTSAFSKFYEQS  
VADVSSNNKGGLLVHFVWVMPRAKGHIFCEDCVAALKDSIQTSINRTSVGSLQGLAVDMDSVNLGDCWSFLKK  
KKRKENGAVSTDKGCSQFYAEHLSLHYPLEISAASGRMLMCHFKLVAIVGYLRLSIKSIQIEADNCVTDLSLTIYDSLLPIR  
SSILYRICEPTRTLMFSVSTNNMLVTFKSPHIRLSGIRAYFEIPEQKCENTVLVKDITGFEKGISSPYPSYPPKCK  
CTWKFTSLSTLGIALKFYNSITKKSMKCEHGWWEINEHMYCGSYMMDHQTIFRVPSPLVHIQLQCSSRLSDKPLLA  
EYGSYNISQPCPVGSRFCSSGLCVPAQQRCDGVNDCFDESELCVSPQACNTSSFRQHGPLICDGFDRDCENGRD  
EQNCTQSIPCNNRTFKCGNDICFRKQNAKCDGTDCPDGSDDEEGCTCSRSSALHRIIGGTDLEGGWPWQVSLHF  
VGSAYCGASVISREWLLSAHCFHGNRLSDPTPWTAAHLGMYVQGNKAFVSPVRRIVHEYYNSQTFDYDIALQLSIA  
WPETLKQLIQCIPPTGQRRVRSGEKCWWTGWGRRHEADNKGSLVLQQAEEVELIDQTLQVSTYGIITSRMLCAGIMSG  
KRDAKGDGGPLSCRRKSDGKWILTGVSWGHGCGRPNFPVGVYTRVSNFVFWIHKYVPSLL

>SGP422\_SEQID\_109  
MTLNKIKDLFAGKGQWDLAPEAEMLKPMIAVLVLSLTVAVTIGLLVHFLVFDQKKEYYHGSFKILDQPQINNFGQSN  
TYQLKDLRETTENLVSLKMYLSFVCHSPEEDGVKVDVIMVFQFPSTEQRAVREKKIQSILNQKIRNLRALPINASSVQV  
NVAMVKNGNVPGSGGAGEAPGLGAGPAWSPMSSSTGELTVQASCGKRVPLNVNRIASGVIAPKAAWPWQASLQY  
DNIHQCGATLISNTWLVTAAHCFQKYKNPHQWTVSFGTKINPPLMKRNVRRFIHEKYRSAAREYDIAVQVSSRVTF  
DDIRQICLPEASASFPQNLTVHITGFALYGGESQNDLREARVKIISDDVCKQPVYVGNNDIKPGMFCAGYMEGIYDAC  
RGDSGGPLVTRDLKDTWYLVIGVSWGDNCGQKDKPGVYTVQVYYRNWIAASKTGI

>SGP538\_SEQID\_110  
MSLMDDQPPMEAAEQYAEEGPGGIFRAEPGDQQHPISQAVCWRSRMRRGCAVLGALLAGAGVGSWLLVYLCPA  
ASQPISGTLQDEEITLSCSEASAEALLPALPKTVSFRINSEDFLEAQVRDQPRWLLVCHEGWSPALGLQICWSLGH  
RLTHHKGVNLTDIKLNSSQEFQALSPRLGGFLEEAWQPRNNCTSGQVSLRCSECGARPLASRIVGGQSVAPGRWP  
WQASVALGFRHTCGSVLAPRWVVTAAHCMHSFRLARLSSWRVHAGLVSHSAVRPHQALVERIIPPLYSAQNHD  
YDVALRLQTALNFSDTVGAVCLPAKEQHFPKGRCWVSGWGHTHPSHYSSDMLQDVTVPFLFSTQLCNSSCVYSG  
ALTPRMLCAGYLDGRADACQDGGGLVCPDGDWRLVGVSWGRACAEPNHPGVYAKVAEFLDWIHDTAQDSLL

FIG. 2Q

>SGP527\_1\_SEQID\_111  
 MARHLLPLVMLVISPIGAFQDSALSPTQEEPEDLDCGRPEPSARIVGGSNAQPGTWPWQVSLHHGGHICGGSLIA  
 PSWVLSAAHCFMNTNGLEPAAEWSVLLGVHSQDGLDGAHTRAVAIVPANYSQVELGADLALLRLASPASLGPVAV  
 WPVCLPRASHRFVHGTACWATGWGDVQEADPLPWVLQVELRLGEATCQCCLYSQPGFNLTLQILPGMLCAGY  
 PEGRRDTCQDGGGLVCEEGRWFAGITSGFGGRRNRPGVFTAVATYEAWIREQVMGSEPGPAFTQPQKT  
 QSDPQEPREENTCIALPEGKAPRPGAWPWEAQVMVPGSRPCHGALVSESWLAPASCFLDPNSSDSPPRDLDAW  
 RVLLPSRPRAERVARLVQHENASWDNASDLALLQLRTPVNLSAASRPVCLPHEHYFLPGSRCRLARWGRGEPALG  
 PGALLEAELLGGWWCHCLYGRQGAAPVLPDPPHALCPAYQKEEVEGSCWTHGFWISHVTRGAYLEDQLAWDWG  
 PDGEETETQTCPPHTEHGACGLRLAAPVGLWPWLAEVHVAGDRVCTGILLAPGWVLAATHCVLRPGSTTVPIYEV  
 YLGRAGASSLPQGHQVSRVISIRLPQHILGRPLALLESSRVEPSPALPICLHPAGIPPGASCWVLGWKEPQDRVP  
 VAAAVSILTQRICDCLYQGILPPGTLCVLYAEGQENRCMETSAPPLLCQMTEGSWLVGMVAVQGSRELFAGPEEAWI  
 SQTVGEANFLPPSGSPHWPTGGSNLCPPELAKASGSPHAVYFLLLLTLIIQS

>SGP542\_SEQID\_112  
 AMGLGLRGWGRPLLTATALMLPVKPPAGSWGAIIGGHEVTPHSRPMASVRFGGQHHCGGFLLRARWVWSAAH  
 CFSHRDLRTGLVVLGAHVLSTAEPTQQVFGIDALTTHPDYHPMTHANDICLLQLNGSAVLGPAVGLRLPGRRARPPT  
 AGTRCRVAGWGFVDFEELPPGLMEAKVRVLDPDVCNSSWKGHLTLMCTRSGDSHRRGFCFSADSGGPLVCRNR  
 AHGLVSFSGLWCGDPKTPDVYTQVSAFVAWIWDVRRSSPPQGLPGTTRPPGEAA

>SGP551\_SEQID\_113  
 MPVAEAPQVAGGQGGDGEAEPEGMFKACEDSKRKARGYLRLVPLFVLLVLSAGVLLWYFLGYKAEVMVS  
 QVYSGSLRVLNRHFSQDLTRRESSAFRSETAKAQKMLKELITSTRLGTYNSSSVYSFGEGLTCTFFWFILQIPEHRRRL  
 MLSPEVWQALLVEELLSTVNSSAAVPYRAEYEVDPGLVILEASVKDIAALNSTLGCYRYSYVGGQVLRLLKGPDLHLAS  
 SCLWHLQGPKDLMLKRLLEWTLAEORDRLAMYDVAGPLEKRLITSVYGCSRQEPVVEVLASGAIMAVVWKKGLHSYY  
 DPFVLSVQPWVFQACEVNLTDNRDLSQGVLPSTPYFSPYSPQTHCSWHLTPSLDYGLALWFDAYALRRQKYDLPC  
 TQQQWTIQNRRLCGLRILQPYAERIPVATAGITINFTSQISLTGPGVRVHYGLYNQSDPCPGFEFLCSVNLGCVACDGG  
 VKDCPNGLDERNCVCRAFTQCKEDSTCISLPKVCDDQPDCLNGSDEEQCEGVPCGTFTFCEDRSCVKKPNPQC  
 DGRPDCRDGSDDEEHCDGLQGPSSRIVGAVSSEGEWPWQASLQVRGRHICGGALADRWWITAAHCFQEDSMAS  
 TVLWTVFLGKWQNSRWPGEVSKVSRLLHPHYHEEDSHDYDVALQLDHPVRSAAVRPVCLPARSHFFEPGLHC  
 WITGWALREGGPISNALQKVDVQLIPQDLCSEAYRYQVTPRMLCAGYRKGGKDACQGDGSGGPLVCKALSGRWFLA  
 GLVSWGLGCGRPNYFGVYTRITGVISWQQVVT

FIG. 2R

>SGPr451\_SEQID\_114  
 DLPPSCSPASKMRLGLLSVALLFVGSSHLYSYDHYSPSGRHLRGPSPPEAASSQQAQAEAVRKRLRRRREGGAHAKDCG  
 TAPLKDVLQGSRIIGTEAQAGAWPWVSLQIKYGRVLVHVCGLVRRERWLTAAHCTKDTSDPLMWTAVIGTNNIH  
 GRYPHTKKIKIAIHPNFILESYVNDIALFHLKAVRYNDYIQICLPFDVFQILDGNTKCFISGWGRTKKEGNATNIIQD  
 AEVHYISREMCNRSYGGIIPNTSFCAGDEDEGAFDTCRGDSGGPLMAYLPEYKRFVFMGITSYGHGCGRRRGFPVY  
 IGPSFYQKWLTEHFFHASTQGILTINILRGQILALCFVILLATT

>SGPr452\_1\_SEQID\_115  
 SPPQPRTPDCRLQASLEALATLAPQPSDWLCFADLWFEADGAAHSMGLSSLKWAWAKPSGMPVPENDLVGIVG  
 GHNAPPGKWPWQVSLRVSYHWASWAHICGGSLIHPQWVLTAAHCIFWKDTPDSIYRIHAGDVLYYGGRGLLNVSRI  
 IVHPNYVTAGLGADVALLQLPGSPLSPESLPPYRLQQASVQVLENAVCEQPYRNASGHTGDRQLILDDMLCAGSEG  
 RDCYGDSSGGPLVCRLRGSWRLVGVSWSGYGCTLRDFPGVYTHVQIYVLWILQQVGELP

>SGPr504\_SEQID\_116  
 IIGHEVTPHSRPMASVRFGGQHHC GGFLLRARWVVSAAQCFSH

>SGPr469\_SEQID\_117  
 GDSSGPLVCELNGTWVQVGIVSWGIGCGRKGYPGYTEVSFYKKWI

>SGPr400\_SEQID\_118  
 MAGEQVTANVSRYPGQKTMSPFEKTFLLSYRASLLAVVTHRSNNSRGRAFESQVLPDLTAGDAADPPIPPLGPGAAL  
 LKSGPFRIWQGVKTKGEEGDRDTGTAGYAFTLLLLGISGEPPEWCGRPTVSSGIASGLGASVGQWPWQVSIRQGL  
 IHVCSDTLISEEWVLTVAICFPLSPHPDFQANTSSAIAVVELPSPVSPVLLICLPSSEVYLKKNTTSCWWTGWGTYGI  
 FQYIKRSYTLKELKVPLIDLQTCGDHYQNEILLHGVELISEAMICSKLPVGQMDQCTVRIHPSGTFRPCLPQ

FIG. 28